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Doctor of Philosophy

Identification Of Yeast Genes Enabling Efficient Oenological Fermentation Under Nitrogen-Limited Conditions

Josephine Jasmine Peter
M. Sc.

Department of Wine and Food Science
Faculty of Sciences
The University of Adelaide

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Abstract

Nitrogen deficiency can often lead to slow or sluggish fermentation, resulting in wine out of specification and at risk of oxidation and microbial contamination. Problems due to nitrogen deficiency can be rectified by optimising grape chemistry (through vineyard fertilization), or more commonly supplementing the fermentation with ammonium salts. An alternative is to use wine yeast that can utilize nitrogen efficiently and complete fermentation more reliably. However, to develop 'nitrogen efficient' yeast, it is important to understand how such yeast can utilize nitrogen effectively by identifying genes that influence fermentation performance over a range of nitrogen concentrations. Past research related to the identification of genes influencing nitrogen efficiency under fermentative conditions is largely confined to laboratory yeast.

Investigation of the ~5,000 non-essential genes in yeast is possible through research tools such as deletion libraries (collections of strains, each with a single gene deletion). Several genome-wide studies have successfully used deletion libraries in the auxotrophic background of laboratory yeast to investigate phenotypes in response to exposure to single stress factors associated with fermentation. However, the need to supplement with amino acids to overcome auxotrophies makes quantitative physiological studies in nitrogen limiting conditions impractical. Therefore, in this study, we have used a prototrophic deletion collection in both laboratory and wine yeast backgrounds to identify genes influencing fermentation performance.

Screening (micro-fermentation; 600 µL) of the prototrophic laboratory yeast deletion library (BY4741; 5,372 deletants) and the partial wine yeast library (AWRI1631; 1,844 deletants) for growth and consumption of sugar and nitrogen under limiting (75 mg FAN L^{-1}) and non-limiting nitrogen (450 mg FAN L^{-1}) conditions identified deletants with improved fermentation. To better understand the role of individual genes in fermentation, candidate gene sets from each screen were compared to each other and to other published data sets from genome wide transcriptomic analyses related to fermentation.

Wine yeast deletants that enabled shortened micro-fermentation duration in low nitrogen conditions were further investigated, since the experiment best represented nitrogen deficient grape must associated with problematic fermentation. Fifteen deletants completed fermentation quicker than the wildtype (*c.a.* a 15-59% time reduction) when tested in larger (100 mL) fermentations. This group of genes were annotated to biological processes including protein modification, transport, metabolism and ubiquitination (*UBC13, MMS2, UBP7, UBI4, BRO1, TPK2, EAR1, MRP17, MFA2 and MVB12*), signalling *(MFA2)* and amino acid metabolism (*AAT2*). Among

the genes identified, *MFA2* (mating a-factor), which conferred a 34% decrease in fermentation duration, was further investigated. We were interested to understand how deletion of this mating type gene affected fermentation since a link between these metabolic pathways would be novel.

The 15 strains identified in this study, which were fermentation proficient in a 'wine-like', limited nitrogen condition, provide a basis to better understand how yeast adapt to nitrogen limitation during fermentation. Furthermore, the corresponding genes can be targeted in second generation strain improvement programs, using tools such as CRISPR (yet to be approved by relevant regulatory bodies) to generate nitrogen efficient yeast to reduce the need to supplement low nitrogen fermentations.

List of abbreviations

Abbreviation	Full term
Δ	Gene deletion
°C	Degree celsius
3'	Three prime of the nucleic acid sequence
5'	Five prime of the nucleic acid sequence
AAPs	Amino Acid Permeases
APO	Ascomycete Phenotype Ontology
ATP	Adenosine Triposphate
AUC	Area Under the Curve
Bp	Base pair
CDGJM	Chemically Defined Grape Juice Medium
cDNA	Complementary deoxyribonuclease acid
CO_2	Carbon dioxide
CRISPR	Clustered Regularly Interspaced Short Palindromic Repeats
DAP	Diammonium Phosphate
DNA	Deoxyribonucleic Acid
E	Environment
FAN	Free Amino Nitrogen
FD	Fermentation Duration
G	Genotype
GE	Genotype and environment
GM	Genetically Modified
GO	Gene Ontology
GS	Glutamate Synthetase
HMR	Hidden MAT right
HN	High Nitrogen
HOG	High Osmolarity Glycerol
KEGG	Kyoto Encyclopaedia of Genes and Genomes
LN	Low Nitrogen
LYDL	Laboratory Yeast Deletion Library
MAPK	Mitogen Activated Protein Kinase
N	Nitrogen
NCR	Nitrogen Catabolite Repression
NOPA	o-phthaldialdehyde/N-acetyl-L-cysteine
NREL	Normalized Relative Expression Level
OD	Optical Density
ORF	Open Reading Frame
PCR	Polymerase Chain Reaction
PM	Plasma Memebrane

qPCR	Quantitative Polymerase Chain Reaction
QTL	Quantitative Trait Loci
RNA	Ribonucleic Acid
RNA-Seq	RNA sequencing
SD	Standard Deviation
SGD	*Saccharomyces* Genome Database
SNPs	Single Nucleotide Polymorphisms
SPS	Ssy1-Ptr3-Ssy5
TCA	Tricarboxylic Acid Cycle
WYDL	Wine Yeast Deletion Library
YAN	Yeast Assimilable Nitrogen
YPD	Yeast Extract Peptone Dextrose

CHAPTER 1

Literature review and summary of research aims

1. Introduction

This literature review was written during the first six months of Ph.D. candidature (August 2013), as the Core Component Structured Program (CCSP). The purpose of this literature review is to provide the background material to the project and identify a research topic to address the project aims. For more updated literature, please refer to the introduction sections for the individual thesis chapters.

1.1 Yeast and winemaking

Winemaking dates back to 6000 BC, with the earliest evidence found in Asia Minor (Mesopotamia and the Caucasus). Historically, winemaking is associated with the spread of civilization, initially through the Mediterranean and later in the 15th and 16th century to the New World - the Americas and South Africa (Pretorius, 2000). However, wine microbiology is only a historically recent practice, with Louis Pasteur in 1863 showing that yeast, namely *Saccharomyces cerevisiae*, are responsible for alcoholic fermentation. This knowledge that yeast can convert grape sugars (mainly glucose and fructose) into ethanol, carbon dioxide, and other by-products has contributed significantly to the control of the winemaking process (Pretorius 2000). Today, *S. cerevisiae* is most commonly used in wine fermentations because of its reliable fermentative properties and desirable sensory contribution to wine (Pretorius 2000; Astorga et al. 2007). Yeast affects the aromatic profile through the synthesis of flavour compounds as well as the modification and liberation of those from grape-derived (non-volatile) precursors (Bartowsky et al. 2007).

While grape musts are a complex mixture of nutrients, they are harsh environments for yeast growth and metabolic activity. Grape musts generally contain high concentrations of sugars and are low in pH (Backhus et al. 2001). During the progression of fermentation, yeast cells can be subjected to extreme temperatures, progressive depletion of nutrients and increasing ethanol content, which affects their growth and viability (Pretorius 2000; Mendes-Ferreira et al. 2007a). However, wine yeast have distinct physiological properties that help them adapt to harsh oenological conditions (Rossignol et al. 2003). Although wine yeast are usually able to complete fermentation with nutrients naturally present in grape juice, sometimes this concentration is not sufficient (Ugliano et al. 2009; Pretorius 2000; Barbosa et al. 2009). Complete fermentation is defined as when the residual fermentable sugar in wine reaches <2-4 g L^{-1} and it is one of the primary objectives for the production of dry table wines (Alexandre and Charpentier 1998). To complete fermentation of the sugars, typically yielding 12 to 15% alcohol, yeast requires high concentrations of nutrients such as nitrogen (Vilanova et al. 2007). However, the concentration of nitrogen in grape juice can also vary widely and sufficient nitrogen is very important for completing

fermentation (Bell and Henschke 2005). *S. cerevisiae* can use a variety of nitrogen sources, however, some are not assimilable (Beltran et al. 2004; Crépin et al. 2012). Nitrogen compounds readily consumed by yeast cells are termed as Yeast Assimilable Nitrogen (YAN) and in grape juice typically comprise ammonium salts, amino acids and peptides (Bell and Henschke 2005, Ugliano et al. 2007).

Insufficient YAN in the grape juice often results in problematic slow or sluggish fermentation if not rectified (Alexandre and Charpentier 1998; Bisson 1999; Taillandier et al. 2007). Grape must nitrogenous content depends on the grape variety, time of harvest, root stock, nitrogen fertilization, berry maturation, vine water status, soil type and fungal infection (Alexandre and Charpentier 1998; Salmon and Barre 1998; Pretorius 2000). Nitrogen present in the grape must range from 60-2400 mg L^{-1} with the minimum requirement of YAN for a standard fermentation being 120-140 mg L^{-1} (Alexandre and Charpentier 1998; Conradie 2001; Mendes-Ferreira et al. 2004). Ammonium and amino acids are the primary YAN compounds present in the grape juice, making up to 40% and 51-92%, respectively of the total assimilable nitrogen (Beltran et al. 2004; Crepin et al. 2012). These are readily taken up by yeast, with 50% to 100% consumed during the first 20 hours, depending on the initial amount present (Jiranek et al. 1995a; Salmon and Barre 1998; Carrasco et al. 2003; Vilanova et al. 2007).

Historically, fermentation was performed using indigenous microflora present on grapes, but today commercial starter cultures predominate. Pure culture inoculation usually results in rapid and reliable fermentations that are relatively predictable in flavour and thus quality of wine (Pretorius 2000). Although there are over 200 commercially available starter cultures (Bartowsky et al. 2007), there is still a focus on improving wine yeast strains to enhance the fermentation process and produce a wine of improved quality (Pretorius 2000; Donalies et al. 2008). This is being driven by the need for more reliable strains that are able to tolerate more extreme fermentation conditions (which are becoming common) as well as strains that result in wines with unique flavour and aroma profiles (Pretorius 2000).

Efforts involving development of certain traits of wine yeast, often involve using laboratory strains initially as they are readily genetically modified (Donalies et al. 2008). Laboratory strains are simple models for genetic studies as they are heterothallic, that is they carry mutations that prevent them from switching mating type, are generally haploid or diploid (rather than polyploidy or aneuploidy), and are engineered to have auxotrophies (Astorga et al. 2007; Donalies et al. 2008). Auxotrophy is a condition where the organism is unable to synthesize certain enzymes and requires specific growth factors supplemented in the medium to compensate the nutritional

deficiency (Pronk 2002; Mülleder et al. 2012). Auxotrophic markers are important selection tools used to select against revertants after genetic modifications (Pronk 2002). While laboratory strains are readily manipulable, they lack the phenotypic characters needed to produce quality wine (Astorga et al. 2007; Donalies et al. 2008). It is preferable to use wine yeast strains in such studies, however they are homothallic, are typically diploid, if not polypoid, aneuploid or alloploid, and tend to sporulate poorly. Being prototrophic, they require dominant selectable markers such as antibiotic resistance, to be suitable for genetic studies.

Gene deletions are important tools in determining gene function, and in providing an insight into further strain improvement (Birrell et al. 2001; Giaever et al. 2002). Gene functionality can be partially determined by analysing the phenotype of a yeast strain (deletant) carrying a gene deletion (Winzeler et al. 1999; Ando et al. 2006). With recent developments in genetic engineering and the complete sequencing of *S. cerevisiae*, it is possible to easily delete or introduce a gene into the yeast genome (Donalies et al. 2008). To this end, a consortium was set up to construct a complete collection (library) of gene deletions (i.e. the gene knock-out collection) of *S. cerevisiae* by systematically inactivating every single gene (Winzeler et al. 1999; Birrell et al. 2001). This approach has enabled research aimed at understanding the biochemical and physiological functions of an entire biological system.

This Ph.D. project involves the use of yeast deletion libraries to identify genes influencing fermentation performance in different nitrogen conditions, to better understand the process of fermentation, enabling a guided approach to strain optimization of 'industry ready' wine yeast.

1.2 Importance of nitrogen during alcoholic fermentation

During fermentation, YAN compounds present in grape juice are metabolised to supply an intracellular pool of polyamines, amino acids, nucleotide bases and their derivatives. These products are needed for cell biomass formation, protein synthesis, and growth, and the excess (e.g. arginine) is stored in the vacuoles until required (Sablayrolles et al. 1996; Hofman-Bang 1999; Carrasco et al. 2003; Vilanova et al. 2007). However, yeast is unable to assimilate all forms of nitrogen present in grape juice and can differentiate between preferred and non-preferred nitrogen sources. Examples of preferred nitrogen sources are ammonium, asparagine, glutamate, and glutamine. Proline, allantoin and urea are examples of non-preferred nitrogen sources (Hofman-Bang 1999; Crépin et al. 2012).

As a consequence nitrogen availability during fermentation promotes biomass formation and fermentation rate and shortens fermentation duration (Alexandre and Charpentier 1998;

Beltran et al. 2005). When nitrogen is supplemented during fermentation, the timing of addition influences its affect. For instance, nitrogen addition during the cell growth phase enhances biomass formation, whereas addition during early stationary phase stimulates fermentation resulting in shortened fermentation duration, with little increase in biomass (Beltran et al. 2005). Nitrogen additions made after half of the sugar has been utilised can have a reduced effect (Bell and Henschke 2005). In addition to biomass formation and fermentation rate, the concentration and type of nitrogen present during fermentation also influences the production of many volatile and non-volatile compounds. These compounds are responsible for desirable aromas in wine; however, an excessive concentration of these can be detrimental to wine quality (Bely et al. 2003; Vilanova et al. 2007).

1.3 Adverse effects of limited nitrogen

Nitrogen limitation during fermentation can negatively affect yeast growth and metabolism, resulting in reduced sugar catabolism, sluggish or stuck fermentation resulting in wine that may have residual sugars, is prone to spoilage, out of specification and therefore decreased quality (Alexandre and Charpentier 1998). Typically fermentation takes approximately 7-10 days to complete, while slow and sluggish fermentation can exceed a month or more. Excessive fermentation time can be costly since tank space is often in short supply and the extra labor is required

Additionally, nitrogen limitation can lead to the formation of H_2S as part of the sulfate assimilation pathway. During this process H_2S is liberated as an intermediate product formed by the reduction of sulfate or sulphite (Bell and Henschke 2005; Jiranek et al. 1995b). However, in the presence of suitable and sufficient nitrogen sources H_2S is sequestered by O-acetyl homoserine, which is derived from nitrogen metabolism (Ono et al. 1999). On the other hand insufficient nitrogen leads to the accumulation of H_2S inside the cell that later diffuses into the fermenting must producing objectionable ‘rotten-egg’ odour (Bell and Henschke 2005; Jiranek et al. 1995b). However, in Australia, grape juices have typically low concentrations of nitrogen and winemakers commonly supplement these juices with nitrogen salts often curatively (Alexandre and Charpentier 1998).

1.4 Nitrogen supplementation and side effects

Problems due to nitrogen deficiency can be rectified by optimizing vineyard fertilization or more commonly, supplementing the fermentation medium with ammonium salts (Jiranek et al. 1995a), usually diammonium phosphate (DAP) (Gutiérrez et al. 2013b). These supplementations

are typically carried out empirically without determining the nitrogen requirement of the organism or the nitrogen content of the grape juice (Jiranek et al. 1995a). High nitrogen supplementation contravenes the wine industry's desire to reduce the amount of additives used in the production of wines and the level of DAP supplementation is commonly regulated throughout international markets. Therefore there is a need to adhere to the demands of both regulatory authorities and consumers (Pretorius 2000). Moreover, poorly considered supplementation during fermentation can result in a wine with a high residual nitrogen content after fermentation, thereby encouraging microbial instability and production of undesirable compounds (such as volatile phenols, ethyl carbamate and N-heterocyclic compounds; Bell and Henschke 2005) that reduce the quality of wine (Jiranek et al. 1995a; Taillandier et al. 2007; Gutiérrez et al. 2013b). Therefore it is important to have a sound knowledge of the nitrogen content of the grape juice and the nitrogen requirement of the yeast strain used in fermentation to avoid excessive additions (Gutiérrez et al. 2013b). Knowledge of nitrogen content will render supplementation as an option rather than a routine practice and reduced use of supplements is in line with the industry's aim in producing quality wine (Jiranek et al. 1995a).

1.5 Yeast nitrogen transport and metabolism

Through general and specific transport systems or permeases (membrane proteins) yeast transports from the grape juice into the cell. The high capacity general permeases include Gap1p, Can1p (arginine carriers) and the ammonium transporters (Mep1p, Mep2p, Mep3p). Among the MEP proteins, Mep2p shows the highest affinity for ammonium followed by Mep1p and Mep3p (with lower affinity). Apart from these, there are specific transporters which carry one or a few amino acids, listed in Table 1 (Beltran et al. 2004; Crépin et al. 2012; Ljungdahl and Daignan-Fornier 2012).

Table 1.Plasma membrane-localized transporters of nitrogen substrates

Systematic name	Gene name	Functional description	Substrate specificity
Ammonium permease family			
YGR121C	*MEP1*	Medium-affinity, high-capacity ammonium permease	Ammonium
YNL142W	*MEP2*	High-affinity, low-capacity ammonium permease	Ammonium
YPR138C	*MEP3*	Low-affinity, high-capacity ammonium permease	Ammonium
Amino acid permease family			
YKR039W	*GAP1*	General, high-capacity, amino acid permease	All L-amino acids, D-amino acids, GABA, peptides, polyamines
YGR055W	*MUP1*	High-affinity methionine permease	Cys
YBR069C	*TAT1*	Tyrosine and tryptophan permeases	Val, Thr, His (low-affinity), Leu
YOL020W	*TAT2*	High-affinity tryptophan permease	Phe, Tyr, Trp, Gly, Ala
YDR508C	*GNP1*	High-affinity glutamine permeases	Thr, Gln, Ser, Cys, Leu, Met, Asn
YCL025C	*AGP1*	Broad substrate range, medium capacity permease	Val, Ile, Phe, Met, Ser, Leu, Trp, Met, Cys, Ala
YBR068C	*BAP2*	Branched-chain amino acid permease	Val, Ile, Phe, Met, Leu, Trp, Met, Cys, Ala
YDR046C	*BAP3*	Branched-chain amino acid permease	Val, Ile, Phe, Tyr, Leu, Trp, Met, Cys, Ala, Thr
YNL268W	*LYP1*	Lysine permease	Lys, Met
YGR191W	*HIP1*	Histidine permease	His
YOR348C	*PUT4*	High-affinity proline permease	Pro
YNL270C	*ALP1*	Arginine permease	Arg
YEL063C	*CAN1*	Arginine permease	Arg
YNL268W	*LYP1*	Lysine permease	Lys, Met
Other transporters/ permeases			
YLL055W	*YCT1*	Cysteine transporter	Cys
YHL061C	*DUR3*	High-affinity polyamine	Urea

Adapted from Ljungdahl and Daignan-Fornier (2012)

These specific and general transport permeases are regulated by different molecular regulatory mechanisms such as Nitrogen Catabolite Repression (NCR) (Beltran et al. 2004; Gutiérrez et al. 2013b) and the SPS sensor (Forsberg and Ljungdahl 2001; Ljungdahl 2009). NCR controls the general (Gap1p, Agp1p) and specific amino acid carriers (Put4p), and the MEP permeases. SPS regulates the synthesis of branched-chain amino acid permeases encoded by *BAP2* and *BAP3*, the high-affinity glutamine transporter Gnp1p, the tyrosine and tryptophan carriers Tat1p and Tat2p, the dicarboxylic amino acid permease Dip5p, and the high-affinity methionine permease Mup1p. To a lesser extent and with lower efficiency, these permeases can also catalyze the importation of several other amino acids (Crépin et al. 2012).

1.5.1 Nitrogen Catabolite Repression (NCR)

Different mechanisms regulate the process of nitrogen transport into the yeast cells. One of the primary mechanism is NCR, which represses the transcription of genes that encode for permeases needed in the uptake and catabolism of non-preferred or poorly used nitrogen sources (Pretorius 2000; Beltran et al. 2004; Jiménez-Martí and Del Olmo 2008). Genes such as *URE2* and the four GATA-binding transcription factors, which are *GLN3*, *GAT1* (positive regulators) and *DAL80*, *DEH1/GZF3* (negative regulators; Salmon and Barre 1998; Hofman-Bang 1999). In the presence of preferred nitrogen sources, Gln3p and Gat1p (the positive activators of NCR) remain in the cytoplasm conjugated with Ure3p, which does not enable the NCR-sensitive gene to use the non-preferred nitrogen sources.

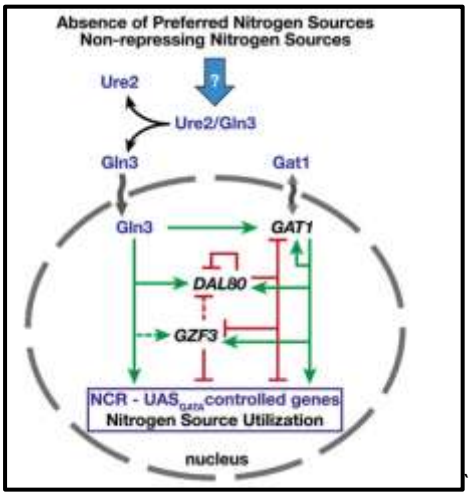


Figure 1. The nitrogen catabolite repression (NCR) circuit. The *URE3* and the four GATA factors: *GLN3* and *GAT1* (positive regulator) and *DAL80* and *GZF3* (negative regulators). All cross regulate each other's expression based on the presence of preferred and non-preferred nitrogen sources, corresponding to their positive and negative role in allowing the expression of NCR-sensitive genes for the uptake of nitrogen sources. Figure and text adapted from Ljundahl and Daignan-Fronier (2012).

On the other hand, depletion of preferred nitrogen sources liberates Gln3p from the URe3p/Gln3p complex and transports Gln3p and Gat1p to the nucleus, derepressing the expression of NCR-sensitive genes allowing the cells to uptake non-preferred sources (Jiménez-Martí and Del Olmo 2008; Crépin et al. 2012). Dal80p and Gzf3p act as repressors of NCR-sensitive genes. All the four GATA factors have zinc-finger DNA binding motifs that enable binding to the GATAAG sequence present in the promoter of the NCR-sensitive genes (Georis et al. 2009; Georis et al. 2011). Also, mutation of *URE3* leads to localization of Gln3p to the nucleus and lifts derepression in spite of the availability of preferred sources (Salmon and Barre 1998). However, Gln3p plays a significant role in NCR, as cells lacking *GLN3* were unable to derepress NCR-sensitive genes (Mitchell and Magasanik 1984; Minehart and Magasanik 1991). Therefore all the four GATA factors control each other's regulation (cross-regulation), contributing either positive or negative regulation based on their role (reviewed by Ljungdahl and Daignan-Fornier (2012); Fig.1).

1.5.2 Plasma membrane Ssy1-Ptr3-Ssy5 (SPS) sensor

The second mechanism by which nitrogen transport is regulated is the SPS sensor. The plasma membrane of the yeast cell contains three core components, Ssy1, Ptr3 and Ssy5, which together are known as the SPS sensor. SPS senses extracellular amino acids, inducing the transcription of genes encoding for particular amino acid permeases (AAPs) to import the amino acids into the cell. Ssy1p senses and activates Stp1p and Stp2p (latent cytoplasmic proteins). These proteins enter the nucleus, bind to the permease genes, transcribing and translating into AAPs, which are then targeted to the plasma membrane for the uptake of the particular amino acids (Ljungdahl 2009; Crépin et al. 2012; Fig. 2).

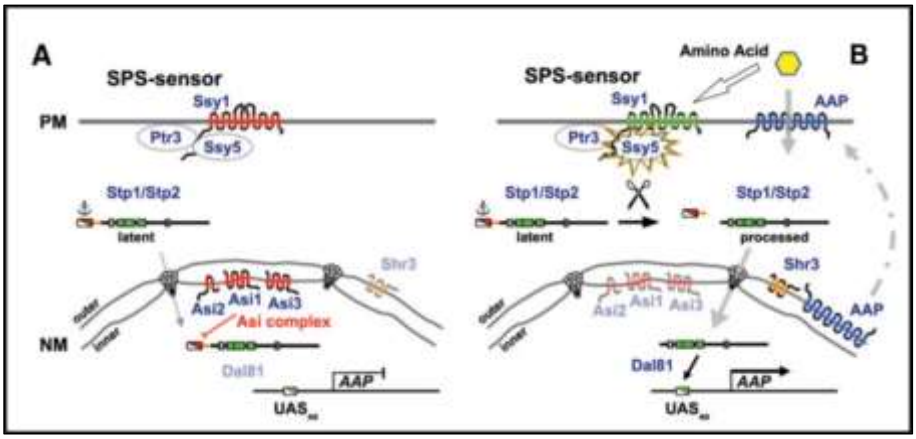


Figure 2. Schematic diagram of the major regulatory steps of the SPS-sensing pathway. (A) The non-induced dormant state in the absence of inducing amino acids: low levels of amino acid permeases (AAPs) are present in the plasma membrane (PM). (B) The induced state in the presence of extracellular amino acids: de-repressed AAP gene expression leads to increased levels of AAPs in the PM and enhanced rates of amino acid uptake (Ljungdahl 2009).

1.5.3 Nitrogen metabolism

Once YAN sources are transported into the cell, the nitrogen is either directly used for protein synthesis or degraded to glutamate and glutamine through the biosynthetic pathways in the presence of ammonium (Hofman-Bang 1999). Glutamate and glutamine are amino acids that provide 85% and 15%, respectively, of total cellular nitrogen (Cooper 1982) and ammonium serves as an amino group donor to produce these compounds. The ammonium needed for the synthesis of glutamate and glutamine is either directly transported into the cell by the MEP transporters or is generated by the degradation of some less preferred nitrogen sources (ter Schure et al. 2000; Magasanik and Kaiser 2002; Fig. 3).

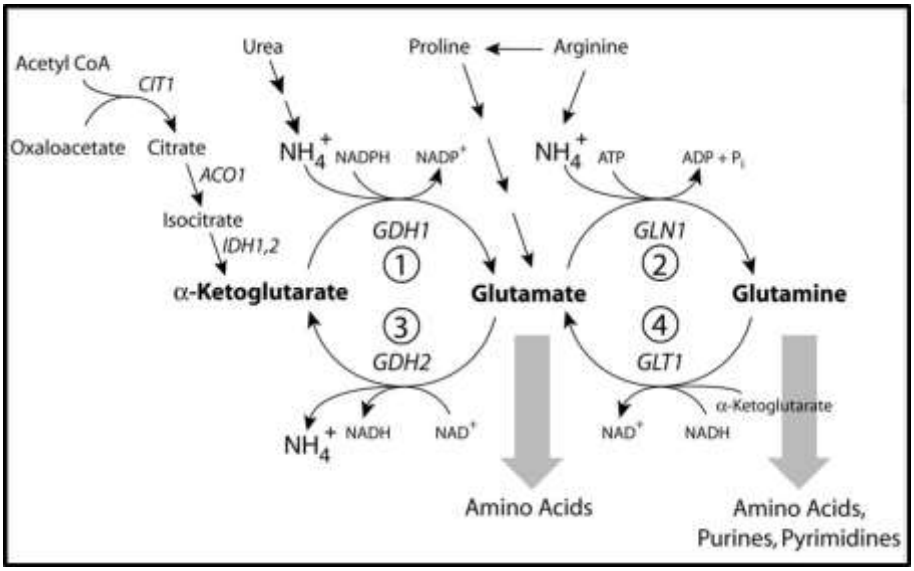


Figure 3. Central pathway for nitrogen metabolism. All cellular nitrogen compounds are synthesized from either glutamate or glutamine. (1) Glutamate is synthesized by ammonia combining with α-ketoglutarate, which is synthesized from acetyl CoA and oxaloacetate in the early steps of the TCA cycle. (2) Glutamine is synthesized by the combination of ammonia with glutamate. (4) Glutamine reacts with α-ketoglutarate, catalysed by glutamate synthetase encoded by *GLT1* resulting in the formation of glutamate (3) Glutamate reacts with NAD-dependent glutamate dehydrogenase (NAD-GDH) encoded by *GDH2* to produce ammonium. The pathways for utilization of other nitrogen sources like urea, proline and arginine, are also shown. The *S. cerevisiae* gene for each of the enzymatic steps is designated in italics (Magasanik and Kaiser 2002).

Yeast converts nitrogen sources into glutamate and glutamine using the Tricarboxylic Acid Cycle (TCA). During fermentation, metabolism of carbon sources takes place through the glycolytic pathway resulting in Acetyl CoA, which enters the TCA cycle to synthesize α-ketoglutarate. This α-ketoglutarate serves as the precursor for the production of glutamate and glutamine in the presence of ammonia. When ammonia is the only source of nitrogen, α-ketoglutarate reacts with ammonia in the presence of the NADP-linked enzyme, glutamate dehydrogenase (NADP-GDH) encoded by the genes *GDH1* and *GDH2* to produce glutamate (Reaction 1). The glutamate combines with ammonia in the presence of the enzyme glutamine synthetase (GS) encoded by

GLN1 to produce glutamine (Reaction 2) (Hofman-Bang 1999; ter Schure et al. 2000; Magasanik and Kaiser 2002). When glutamine is the only source of nitrogen in the medium, Reactions 3 and 4 take place to produce ammonium, where glutamine reacts with α-ketoglutarate catalysed by glutamate synthetase encoded by *GLT1* resulting in the formation of glutamate. This glutamate then reacts with NAD-dependent glutamate dehydrogenase (NAD-GDH) encoded by *GDH2* to produce ammonium (Hofman-Bang 1999; ter Schure et al. 2000; Magasanik and Kaiser 2002).

1.6 Improvement of industrial wine yeast strains

The ability of yeast to assimilate and metabolize compounds such as YAN dramatically influences the capabilities of *S. cerevisiae* to convert grape juice into wine. For this reason, when formulating new strategies to improve wine technology and quality, efficient assimilation by yeast of nutrients such as nitrogen is an important aspect to be considered. Techniques previously used to produce wine of better quality and taste involved the isolation and screening of new yeast from grape and wine samples. This technique has helped in identifying several strains with desirable winemaking characteristics that are used commercially today. However, to improve specific traits of wine yeast, alternative strategies have to be formulated.

Methods such as sexual (mating, sporulation) and parasexual (protoplasmic fusion) breeding, random mutagenesis and genetic engineering are examples of strategies currently used for strain improvement (Cebollero et al. 2007; Donalies et al. 2008). These strain improvement methods have several advantages and disadvantages when compared with one another. The limitation with breeding includes a lack of selection markers and genetic instability of industrial yeast (Cebollero et al. 2007; Donalies et al. 2008). Random mutagenesis is simple, rapid and does not require deeper background knowledge on the gene and its mechanism. However, presence of multiple gene copies in the wine yeast often makes the selection of recessive mutations complicated. Other limitations of random mutagenesis include chances of missing genes contributing to a phenotype and difficulty in studying the entire genome (Winzeler et al. 1999; Giaever et al. 2002). Also, usage of correct dosage of mutagen to produce the desired phenotype and unknown mutations leading to the loss of desirable traits (Pretorius 2000; Steensels et al. 2014) creates further complexities. Conversely, while genetic engineering, allows for controlled modification of genes, it requires a deeper background knowledge of the gene and mechanism that has to be improved (Cebollero et al. 2007). To date, *Saccharomyces cerevisiae* strain ML01 is the first registered recombinant strain, for wine making in the USA. Whereas most wine yeast cannot readily use malic acid, ML01, can complete malolactic fermentation, having the *Oenococcus oeni* gene for malolactic enzyme and the malate permease gene from

Schizosaccharomyces pombe (Husnik et al. 2006). Whilst the use of genetically engineered strains in food production have received only minimal acceptance worldwide, genetic engineering has led to the successful construction of gene deletion libraries. These mutant collections serve as a platform to study gene functionality, which has potential application in understanding which processes to target, regarding the optimisation strategies for future strain improvement (Winzeler et al. 1999; Astorga et al. 2007).

1.7 Using a gene deletion library as a tool to study gene function

Gene deletion libraries can represent a powerful tool for identifying gene function (Winzeler et al. 1999) and thus future target strategies for wine yeast improvement (Donalies et al. 2008). Deletion libraries are usually created by the precise deletion of every single gene or Open Reading Frame (ORF), between its start and stop codon of a given genome. Each gene can be deleted using gene replacement technologies incorporating Polymerase Chain Reaction (PCR) based strategies to generate a cassette targeted at a specific gene and often containing a dominant selectable marker (*KanMX*; Fig. 4). The *KanMX* deletion cassette contains an antibiotic resistance marker coupled on either side with molecular barcodes or tags, made of a 20 base pair oligonucleotide sequences, a "barcode" which allows identification of each deletion mutant (Winzeler et al. 1999; Birrell et al. 2001; Giaever et al. 2002). Based on this strategy, Winzeler and co-workers (1999) successfully constructed a collection of 6925 deletants in a laboratory yeast background. However, as laboratory yeast do not often have desirable winemaking traits, for the specific purpose of physiological studies under winemaking-like conditions, the Australian Wine Research Institute (AWRI) has constructed a partial deletion library in the wine yeast AWRI1631, a *MATa* haplotype of N96 (Borneman et al. 2008; Varela et al. 2012). Unfortunately due to technical difficulties this currently still remains as only a partially complete library.

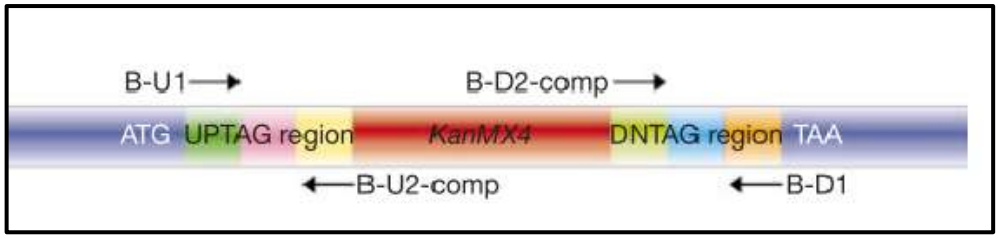


Figure 4. The *KanMX* deletion cassette, containing an antibiotic marker coupled with UPTAG and DNTAG barcode sequences or tags on either side. The B-U1, B-U2-comp, B-D1 and B-D2-comp are the biotin-labelled deletion-specific primers used to amplify the unique UPTAG and DOWNTAG sequence (Giaever et al. 2002).

1.7.1 Previous studies on deletion libraries under fermentation conditions

Several phenotypic studies have investigated gene function during fermentation with the use of deletion mutant collections in a laboratory yeast background. Some examples include the

identification of genes essential for tolerance to ethanol and alcohols (Fujita et al. 2006; van Voorst et al. 2006; Teixeira et al. 2009), high pressure and low temperature (Abe and Minegishi 2008), acetic acid (Mira et al. 2010), oxidative and chemical stress (Tucker and Fields 2004), high glucose (Teixeira et al. 2010), butanol (González-Ramos et al. 2013) and growth under anaerobic conditions (Reiner et al. 2006). A previous study from this laboratory did identify several mutations allowing nitrogen efficient fermentation, yet this was far from comprehensive as a transposon library was utilised and the identity of only a handful of mutants determined (Gardner et al. 2005). To date , there is no published comprehensive study identifying genes related to nitrogen efficiency under fermentative conditions by individually screening every mutant of a deletion library.

1.8 Limitations of current laboratory yeast deletion libraries

Screening for fermentation performance and other physiological studies have successfully used the available laboratory yeast deletion libraries constructed on BY4741, BY4742 and BY4743 backgrounds. However, these possess auxotrophic markers, or mutated genes that encode enzymes involved in the synthesis of amino acids and/or nucleotides (Pronk 2002; Mülleder et al. 2012). These auxotrophic strains are routinely grown either in complex medium (e.g. containing yeast extract and peptone) or defined synthetic media supplemented with sufficient amounts of the appropriate growth factor (Pronk 2002). Several studies showed that such supplementation often produces misleading results that limit data interpretation. Supplementation can block some biological pathways or can even create a combinatorial influence on metabolic networks, which make quantitative comparisons of growth difficult. In addition to interference in metabolic and physiological responses, supplementation can also reduce the life span of auxotrophic cells (Pronk 2002; Canelas et al. 2010; Mülleder et al. 2012).

1.8.1 Requirement for prototrophy and the available prototrophic libraries

To reduce the limitation caused by auxotrophic markers in physiological studies, restoring prototrophy is essential in auxotrophic strains or to generate prototrophic strains carrying a selectable marker to counter select against contamination (Pronk 2002; Canelas et al. 2010; Mülleder et al. 2012). Such strains would have the functional genes required to synthesize enzymes necessary for growth, and therefore should have similar growth kinetics to the wild type strain (Pronk 2002; Mülleder et al. 2012). This would allow gene deletions, which affect processes related to cell growth to be easily identified during a library screen. Recently, Mülleder and co-workers (2012) created a complete collection of gene knock out mutants (deletants) where prototrophy was restored using the pHLUM vector (Fig. 5) in the gene deletion library of BY4741.

The functional genes expressed on the plasmid, complement the mutated genes (auxotrophic markers) on the genome.

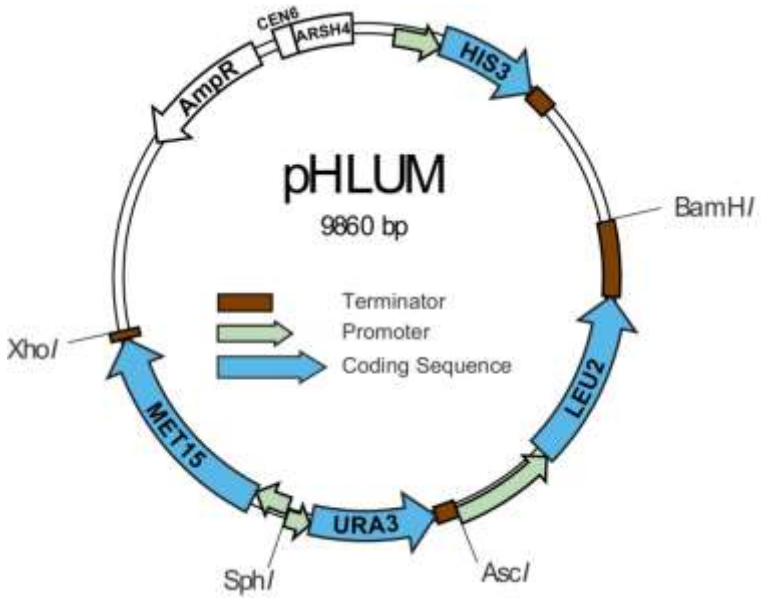


Figure 5. pHLUM vector used to restore prototrophy in the gene deletion library collection of BY4741 (Mulleder et al. 2012)

The construction of a prototrophic gene knock out collection in the haploid wine strain AWRI1631 using similar deletion cassettes to that of the laboratory deletion libraries (Varela et al. 2012) represents a further advancement. This partial library constructed by the AWRI has no known auxotrophic markers and represents 30% of the non-essential genes in the yeast genome. Both these libraries are suitable to study gene function under winemaking-like conditions, allowing for the investigation of fermentation performance under varying nutrient conditions. This Ph.D. project aims to use both these prototrophic mutant collections as screening tools, to identify genes related to nitrogen assimilation during alcoholic fermentation in a synthetic grape juice

1.9 Nitrogen efficient genes and strains of *Saccharomyces cerevisiae*

Past research on yeast transcriptomics aids better understanding on how yeast alter their gene expression pattern based on nitrogen conditions during fermentation. Transcriptomic studies have identified genes that change expression pattern during fermentation under conditions of nitrogen limitation and starvation (Rossignol et al. 2003; Mendes-Ferreira et al. 2007a; Mendes-Ferreira et al. 2007b) and addition of DAP or amino acid to nitrogen-depleted medium (Marks et al. 2003; Mendes-Ferreira et al. 2007b; Jiménez-Martí and Del Olmo 2008). For example, Rossignol et al. 2003 identified significant transcriptional reprogramming of genes (especially the genes associated with stress response) at the beginning of stationary phase as nitrogen became depleted. Likewise, Backhus et al. (2001) used a microarray DNA analysis and compared gene

expression in different nitrogen conditions during fermentation. In high nitrogen, they noticed upregulation of genes involved in the biosynthesis of macromolecular precursors and low nitrogen genes involved in translation and carbon metabolism were upregulated. Mendes and co-worker (2007b) identified 36 genes that were highly expressed in a low nitrogen condition that could be used to monitor nitrogen to avoid stuck/sluggish fermentation arising due to nitrogen depletion. On the other hand, transcriptomic studies undertaken to understand the effect of ammonium or amino acid addition to nitrogen-depleted medium identified that ammonium addition led to an upregulation of genes involved in amino acid synthesis whereas amino acid addition initiated protein synthesis (Jiménez-Martí and Del Olmo 2008). Similarly, Marks et al. (2003) reported a higher expression of genes involved in amino acid biosynthesis on DAP addition.

In an attempt to study yeast gene expression in limited nitrogen followed by nitrogen supplementation, Mendes et al. (2007a) identified variations in the expression of many genes associated with cellular processes such as carbohydrate metabolism, oxidative stress and protein synthesis during fermentation in limited nitrogen. However, refeeding of nitrogen affected the glycolysis and metabolic pathway which allowed yeast to overcome stress and restart fermentation (Mendes et al. 2007a).

Alternatively, in a study comparing gene expression between strains with similar phenotypic and genotypic characters but differing nitrogen requiring strains, Contreras et al. (2012) identified genes related to nitrogen uptake and metabolism. Genes such as *URE2, MET3*1 and *ATO2* and *URA2, HXT12, STR3* and *IIV5* were identified between strains that differed in ammonium and amino acid consumption, respectively. Therefore past transcriptomic studies provide knowledge on the expression pattern of yeast genes based on the nitrogen conditions during fermentation. Whereas, investigating individual deletants of the non-essential genes will enable identification of genes that are proficient in conditions such as limited nitrogen during fermentation. However, there is only limited research directly related to the identification of nitrogen efficient mutants. Gardner and co-workers (2005) used transposon mutagenesis to construct a library of ~5000 yeast mutants, disrupting individual genes in W303 (*MATα, ura3*Δ). The authors screened for nitrogen efficient mutants in a nitrogen-limited: carbon-excess (75 mg FAN L^{-1}, 200 g glucose L^{-1}) medium, two genes were identified (*NGR1* and *GID7*) that when deleted resulted in a shortening of fermentation duration.

1.10 Bioinformatics as tools in determining gene function

Large data sets, for instance those generated during genome scale library screening require specific analytical tools to deliver objective results. Tools such as Gene Ontology (GO;

http://www.geneonotology.org) enable identified genes from a phenotypic study to be classified in relation to gene function. GO provides functional and descriptive information on the molecular function, biological process and cellular component using domain-specific ontologies. Domain specific ontologies are vocabularies that are similar in all the organisms. GO are constructed and supported by researchers from many model organism databases and bioinformatics groups through several consortia (Blake and Harris 2002; Blake et al. 2013). An example of a database group that provides information on budding yeast genome is the *Saccharomyces* Genome Database (SGD, http://www.yeastgenome.org). SGD maintains information on yeast mutant phenotypes using vocabularies such as the Ascomycete Phenotype Ontology (APO), yeast biochemical pathways, systematic nomenclature and also the reference genome sequence. SGD is constructed by collecting and organizing experimental results from the peer-reviewed literature. Hence, SGD is considered to be an encyclopaedia of the yeast genome that can facilitate experimental design and results (Cherry et al. 2012). This project involves the use of tools such as GO and SGD to identify the function of genes linked to nitrogen efficiency.

1.11 Aims and objectives of the project

Based on this literature review outlining the importance of nitrogen during oenological fermentation and its assimilation in the context of generating nitrogen efficient wine yeast, the following gaps were identified:

1. Past transcriptomic studies provide knowledge on the expression pattern of yeast genes in different nitrogen conditions during fermentation. However, identification of individual nitrogen efficient mutants has been limited to those identified with the use of a transposon mutagenesis system not covering the whole genome and identifying only a few involved genes. Analysis of the fermentation performance of deletion mutants of each non-essential gene is required.
2. Past studies have used tools such as the yeast gene deletion libraries, with which screening of individual deletants of non-essential genes has identified genes required for fermentation related processes. Examples include the identification of genes essential for tolerance to ethanol and other alcohols, high pressure and low temperature, acetic acid, oxidative and chemical stress, high glucose and growth under anaerobic conditions. However, there is no study using the deletion libraries to identify deletants influencing fermentation in sufficient and limiting nitrogen conditions.
3. The laboratory yeast deletion libraries utilized in past studies contained auxotrophic markers, which required medium supplementation to overcome auxotrophy. Recent investigations report that auxotrophic markers can influence biological parameters like growth and aging,

which in turn leads to a bias in physiological and metabolic studies. Also, the need for supplementation does not allow for analysis under limited nitrogen conditions. Prototrophic yeast deletion libraries should be screened for fermentation performance under limited in comparison to sufficient nitrogen conditions. To highlight those genes specifically influencing timely completion of fermentation when nitrogen is scarce.

The main objective of this research is to:

1. Screen the prototrophic laboratory yeast deletion libraries (in the laboratory yeast BY4741 and the wine yeast AWRI1631) to identify genes influencing fermentation duration in a chemically defined grape juice medium containing either sufficient or limiting nitrogen (Chapter 1).
2. Compare and further investigate (using Gene Ontology tools and past literature) identified genes from screening experiments between the two libraries, in different nitrogen conditions and to published related data sets to understand how the gene deletants confer fermentation efficiency (Chapter 2 and 3).
3. Further characterize genes found here to be associated with fermentation efficiency in limited nitrogen conditions to understand how deletion enables fermentation proficiency in low nitrogen wine-like juice (Chapter 3 and 4).

CHAPTER 2

Identification of yeast genes related to fermentation efficiency in limited and sufficient nitrogen

2.1 Introduction

Yeast requires sufficient macro-nutrients such as nitrogen to complete fermentation. According to previous reports, the minimum requirement ranges from 120-140 mg L^{-1} (Bely et al. 1990; Cramer et al. 2002; Martínez-Moreno et al. 2012) and 200-267 mg L^{-1} (Mendes-Ferreira et al. 2004). However, nitrogen in grape juice is often limited and requires supplementation to prevent problems such as sluggish fermentation and, in extreme cases, fermentation arrest (Alexandre and Charpentier 1998; Bell and Henschke 2005). Commercial strains differ in their nitrogen requirement (Barbosa et al. 2009; Gutierrez et al. 2012; Martínez-Moreno et al. 2012; Brice et al. 2013; Gutiérrez et al. 2013a), thus yeast with lower nitrogen requirements are more likely to withstand nitrogen deficiency or starvation, thereby utilising the available nitrogen for growth and metabolism, needed to complete fermentation (Gardner et al. 2002; Brice et al. 2013). Such strains are therefore useful in enabling fermentation completion in nitrogen deficient grape must.

The differences in nitrogen requirement may be due to strains possessing high genetic diversity due to a large number of allelic variants (Salinas et al. 2016). Previous QTL analyses have identified some of the genetic basis of these variations related to nitrogen consumption during fermentation. Brice et al. (2014) identified polymorphism in genes (*GCN1, MDS3, ARG81* and *BIO3*) involved in nitrogen metabolism and signalling using bi-parental crosses. Similarly, Jara et al. (2014) identified variations in *GLT1, ASI1* and *GDH2* genes (involved in nitrogen signalling) in strains from a different lineage (i.e. wine and sake). Although classical QTL studies involving bi-parental crosses have mapped traits to loci with large phenotypic effects, these have failed to identify loci contributing to minor phenotypic changes (Bloom et al. 2015; Cubillos et al. 2017). Fulfilling this gap, a recent QTL study used multi-parental cross mapping (Cubillos et al. 2013) together with RNA-Seq to identify variations in genes involved in the major metabolic pathways (i.e. *ARO1*, biosynthesis of aromatic amino acid precursors; *PDC1*, pyruvate decarboxylase; *CPS1*, permease involved in degradation of protein into amino acids; *ASI2*, SPS signalling; *LYP1*, lysine permease and *ALP1*, arginine transporter) that are the basis for strains that are better adapted to different nitrogen conditions during fermentation (Cubillos et al. 2017). While commercially available strains are robust, the ability to complete fermentation in nitrogen deficient juices remains a concern to winemakers. To date, research has focused on improving utilisation of non-preferred nitrogen such as proline (Poole et al. 2009; Long 2014) and arginine (Martin et al. 2003) or increasing nitrogen efficiency, measured by shortened fermentation duration when nitrogen is limiting (Gardner et al. 2002; Zhang 2014). Although some genes related to nitrogen

utilisation and efficiency have been identified (Gardner et al. 2002; Zhang 2014), the knowledge underlying these processes remains limited, with other genes yet to be identified.

Deletion libraries provide the means to determine other genes related to nitrogen efficiency through high-throughput screening of fermentation performance under limited nitrogen conditions. Whilst commercially available gene deletion libraries in haploid or diploid laboratory yeast represent most of the yeast genome, a drawback regarding fermentation studies is that they require supplementation because of the presence of auxotrophic markers (Winzeler et al. 1999). Regardless, they have been successfully employed to study growth sensitivity to single fermentation-related stresses. Examples include tolerance to ethanol (Fujita et al. 2006; van Voorst et al. 2006; Teixeira et al. 2009), acetic acid (Mira et al. 2010), high glucose (Teixeira et al. 2010), growth under anaerobic conditions (Reiner et al. 2006) and adaptation to low temperature (Salvadó et al. 2016). Similarly, work by Walker et al. (2014) identified genes essential to successful completion of fermentation when supplied with high sugar (200 g L^{-1}) and sufficient nitrogen (450 mg L^{-1}) in juice-like conditions which is valuable. However, these auxotrophic strains do not allow fermentation studies under suboptimal nitrogen concentrations. Given that grape must nitrogen content varies widely (50-350 mg L^{-1}; Ugliano et al., 2007) and the risk of stuck and sluggish fermentation increases at <150 mg L^{-1} (Alexandre and Charpentier 1998; Bell and Henschke 2005), it is necessary to investigate the genes affecting fermentation under both high and low nitrogen conditions.

Comparative transcriptomic analysis has allowed a better understanding of how yeast differs in their physiological response to nitrogen composition/content during fermentation. Several studies using different nitrogen requiring yeast (both laboratory and wine strains) grown under Low Nitrogen (LN) and High Nitrogen (HN) conditions have alluded to the genetic basis of their adaptation to these circumstances. For example, studies include: in HN, Barbosa et al. (2015) (670 mg L^{-1}) and Contreras et al. (2012) (518 mg L^{-1}) and in LN, Barbosa et al. (2015) (67 mg L^{-1}), Mendes et al. (2007b) (66 mg L^{-1}) and Brice et al. (2013) (100 mg L^{-1}). Additionally, Rossignol et al. (2003) used grape must with 300 mg L^{-1} (considered sufficient nitrogen) to examine gene expression of the entire genome during alcoholic fermentation. Also, exploration of global gene expression in response to various nitrogen sources has been examined (Scherens et al. 2006; Godard et al. 2007), along with the effect of DAP addition during fermentation (Marks et al. 2003) and ammonium and amino acid addition to nitrogen-depleted medium (Jiménez-Martí and Del Olmo 2008) has revealed modifications in gene expression in order to adapt to various nitrogen conditions. Whilst transcriptomic studies have involved prototrophic yeast (mentioned above),

deletion libraries analysed to date have been auxotrophic, which require supplementation. Prototrophic strains are preferable to auxotrophic strains for physiological studies (Canelas et al. 2010), because experimental protocols can be designed to avoid potential metabolic effects associated with supplementation (Mülleder et al. 2012; Pronk 2002), since none is required, a necessity in low nitrogen studies. Hence, this study reports the two prototrophic deletion collections, one in a laboratory background and the other in a wine yeast background in HN (450 mg L^{-1}) and LN (75 mg FAN L^{-1}) to identify genes influencing fermentation performance.

2.2 Materials and methods

Strains and media used in this study

Prototrophic deletion libraries

A Laboratory Yeast Deletion Library (LYDL) containing 5372 deletants in BY4741 (*MATa*; *his3Δ1; leu2Δ0; met15Δ0; ura3Δ0*), where prototrophy was restored by complementation using a CEN6/ARSH4 low copy plasmid, pHLUM (Mülleder et al. 2012) was used. In addition a partial Wine Yeast Deletion Library (WYDL) containing 1844 deletants in AWRI1631 (a haplotype of wine strain N96; Borneman et al. 2008) with gene deletions constructed as described in Varela et al. 2012 was used.

Replication of the libraries

The libraries were inoculated into 200 µL YPD medium (1% yeast extract, 2% bacto peptone, 2% D-glucose; Guthrie and Fink 2002) in 96-well microtiter plates, using a 96-pinned replicator, and incubated for 2 days at 28 ºC. These cultures were used to inoculate plates for the screening experiment, before addition of glycerol (to 15%) for storage at -80 °C. Liquid handling was done using an 8-channel pipetting CAS-3800 robot (Corbett Robotics, Australia).

A schematic of the subsequent experimental work flow is shown in Fig. 1.

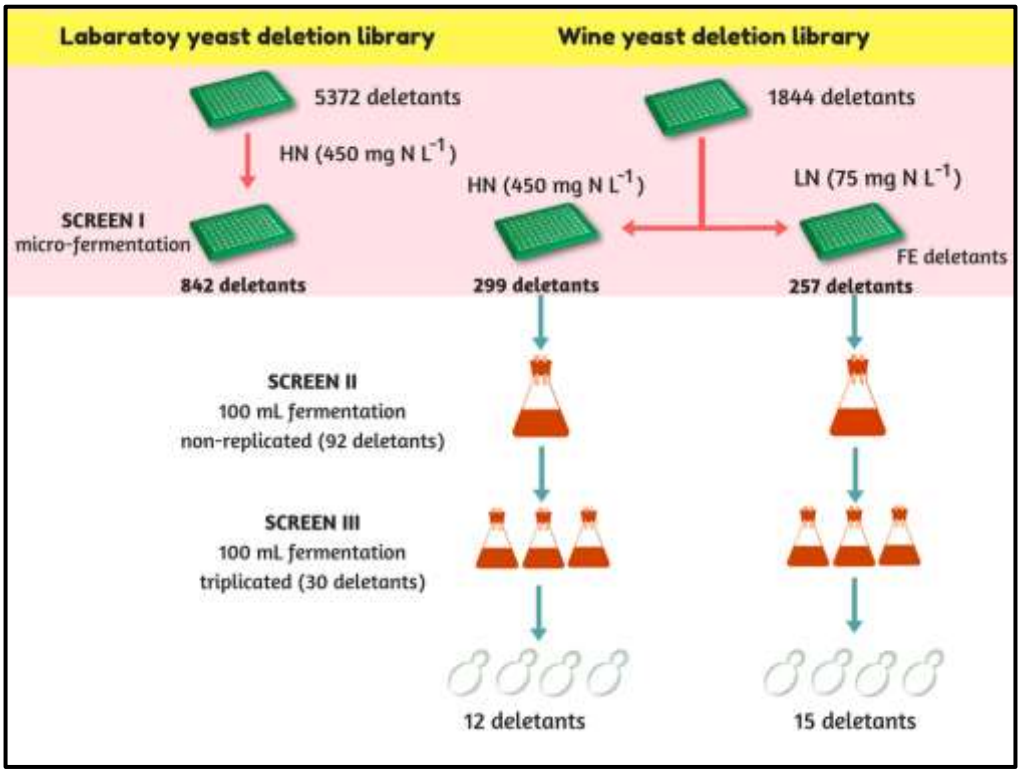


Figure 1. Outline of fermentation screens. Micro-fermentations (600 µL) and laboratory-scale fermentations (100 mL) and the number of gene deletants shortlisted at each stage as fermentation efficient (FE). Evaluation of FE deletants from the WYDL_LN and WYDL_HN screens in 100 mL fermentations identified 15 and 12 FE mutants.

Micro-fermentation (Screen I)

Micro-fermentations were conducted in 600 µL of Chemically Defined Grape Juice Medium (CDGJM; Jiranek et al. 1995a; Walker et al. 2014) in deep 96-well plates. The CDGJM contained 3 g L^{-1} of grape polyphenol extract to mimic red wine fermentations (Walker et al. 2014). The CDGJM was supplemented with different amounts of nitrogen to simulate LN (75 mg L^{-1}) and HN (450 mg L^{-1}) conditions. Four replicates microtiter plate (library) were inoculated with 1% (6 µL) of the overnight YPD culture. A replicate was removed at intervals during fermentation for determination of residual sugar and nitrogen concentration. This sacrificial approach to collect samples over time was used to prevent cross-contamination and experimental artefacts arising from multiple sampling of the same plate during fermentation.

Laboratory-scale fermentations (Screen II and III)

Fermentations (100 mL) involved an initial non-replicated screen of 92 candidates with a 1% (culture v/v) inoculation rate. Thirty strains were chosen from these based on their sugar utilisation and re-evaluated in a triplicated screen using a standardized inoculation rate of 1 x 10^7 cells mL^{-1}. All the laboratory-scale fermentations were conducted on an automated 96-flask

fermentation platform (Peter et al. 2017). Briefly, the platform was built on a Freedom EVO® robotic work desk (Tecan) and consisted of four 24-position water-jacketed carriers to maintain temperature, and stirrers to continuously agitate the fermentations. Each flask comprised of a 100 mL Schott bottle with an inverted internal fermentation lock and silicon sealed sampling port in the lid. The liquid handling arm of the platform collected ~1 mL of samples at programmed intervals into 96-well plates. Samples were stored at -20 ºC for subsequent analysis of residual sugar and nitrogen.

Determination of residual sugar and nitrogen concentration

Residual glucose and fructose were measured enzymatically as described by Boehringer-Mannheim (1989) with modifications to a 96-well format described by Liccioli et al. (2011b). Residual free amino acid was determined by the NOPA (o-phthaldialdehyde/N-acetyl-L-cysteine) procedure (Dukes and Butzke 1998).

Calculation of area under the curve to determine fermentation performance

The residual sugar values measured at each sampling point from the 100 mL fermentations were used to plot fermentation curves for every deletant. The Area Under the Curve (AUC) of each profile was then calculated using the composite trapezoid rule using GraphPad Prism 6 (GraphPad software INC., La Jolla, C.A., USA) as described by Liccioli et al. (2011a). Deletants were considered to be fermentation efficient when the AUC values of the deletants were significantly less than that of the wildtype using a two way ANOVA (Dunnett's multiple comparison test).

Interpretation of screening results and selection of efficient candidates

Deletants were chosen from the initial micro-fermentations (LYDL_HN, WYDL_HN and WYDL_LN) based on their ability to catabolise at least twice the sugar of the wildtype at one or two sequential time points. These 'Fermentation Efficient' (FE) strains were compared between each screen and also with other previously reported gene sets (Marks et al. 2003; Scherens et al. 2006; Mendes-Ferreira et al. 2007b; Contreras et al. 2012; Barbosa et al. 2015). In the WYDL screen, FE deletants in the HN screen, had a sugar content < 16.5 g L^{-1} for the deletants vs ~33 g L^{-1} for the wildtype. In the LN screen, the residual sugar was < 24.5 g L^{-1} (FE deletants) vs ~48 g L^{-1} (wildtype). However, in the LYDL_HN screen, a more stringent cut-off was set since the library contained more deletants (5372) than the WYDL (1844); selection was based on two time-points. Candidates with <34 g L^{-1} sugar compared to the wildtype (69 g L^{-1}) at the first time-point, and <11 g L^{-1} sugar vs wildtype (23 g L^{-1}) at the second time-point, were shortlisted.

Besides these LYDL candidates, 92 best performing strains were chosen from the WYDL based on residual sugar and, in the case of HN fermentation, nitrogen content for laboratory-scale trials. From the WYDL_LN screen, candidates with residual sugar < 48 and 26 g L^{-1} at time-point 1 and time-point 2 (when the wildtype was ~88 and 48 g L^{-1}) and from the WYDL_HN, candidates with residual sugar < 90 and 40 g L^{-1} (while the wildtype was ~99 and 33 g L^{-1}) and nitrogen > 200 mg L^{-1} were chosen for further evaluation.

Identification of gene function and enrichment of the identified gene data sets using computational software tools

The function of candidate genes identified from the micro-fermentation screen was sought using the *Saccharomyces* Genome database (http://www.yeastgenome.org/; Cherry et al. 2012). Gene sets were analysed using the Gene Ontology (GO) software GoToolbox and GO-Stats (http:// genome.crg.es/GO ToolBox/; Martin et al. 2004) to determine enrichment of genes based on their GO terms. This computational tool uses a hypergeometric distribution with hypothesis (Bonferroni) correction to calculate P-values (Martin et al. 2004) and the cut-off for significance was set as $P < 0.01$. The gene set were also analysed using KEGG (Kyoto Encyclopaedia of Genes and Genomes) pathway database (http://www.genome.jp/kegg/tool/map_pathway) (Kanehisa and Goto 2000; Kanehisa et al. 2004; 2016; 2017) to classify genes based on their involvement in distinct cellular pathways.

2.3 Results

Genes whose deletion resulted in shorter fermentation.

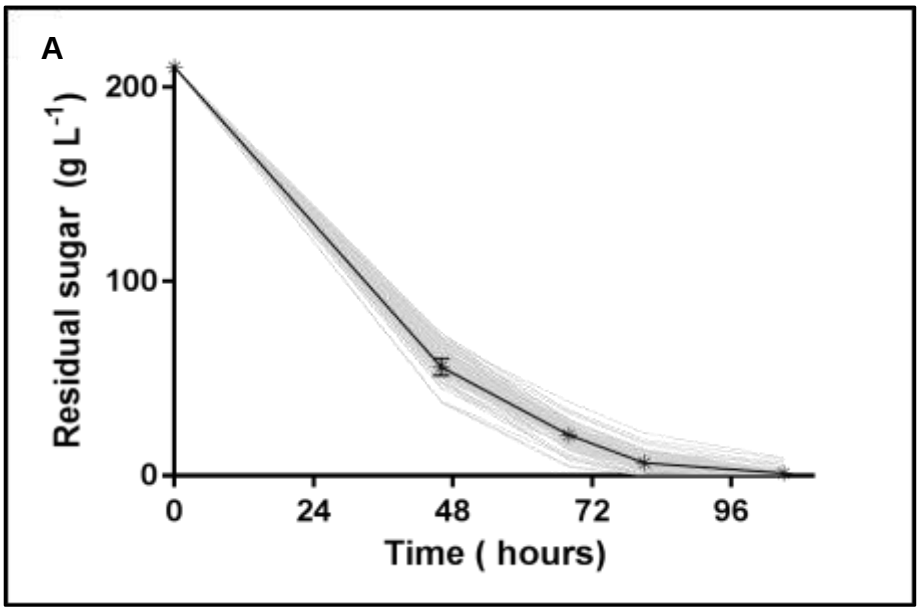
Prototrophic yeast deletion libraries in a laboratory yeast (BY4741) and wine yeast (AWRI1631) were used to identify genes influencing fermentation duration in the HN and LN conditions. The wine yeast deletion library (WYDL) containing 1844 deletants was analysed in micro-fermentation in LN (WYDL_LN; 75 mg L^{-1}; Appendix 3, Pg 163) and HN (WYDL_HN; 450 mg L^{-1}; Appendix 2, Pg 149). The Laboratory Yeast Deletion Library (LYDL) containing 5372 deletants was tested only in HN (LYDL_HN; Appendix 1, Pg 108; Fig. 1). The instability of the plasmid pHLUM in some of the BY4741 strains of the LYDL deletants (100 mL fermentations; data not shown), precluded the screen under LN conditions.

Deletants were selected based on their sugar utilisation profile in micro-fermentations in comparison to their wildtype. Those classified as FE (see Materials and Methods) were shortlisted for *in silico* analysis. Micro-fermentation of the LYDL_HN, WYDL_HN and WYDL_LN identified 842, 299 and 257 FE deletants, respectively (Appendix 4-6, Pg 177-187).

Evaluation of selected yeast deletants in laboratory-scale fermentations

Ninety two of the best performing FE candidates from each of the WYDL micro-fermentation (WYDL_HN and WYDL_LN) were re-evaluated in 100 mL fermentations, as the larger scale provided better control of inoculum, anaerobisis and a larger sample volume. Since one of the aims was to further characterise a set of the most FE deletants, fermentation progress for individual strains was plotted as residual sugar (g L^{-1}) versus time (Fig. 2A and 2B), and the AUC was determined to rank the strains based on their overall performance during fermentation. Thirty-seven deletants were identified from the WYDL_HN screen, having AUC values 85-99% of the wildtype (5975 - 6990 compared to 7006 for the wildtype; Fig. 3A) and 51 deletants from the WYDL_LN had AUC values ranging from 7185 - 9959 (or 72-99%) compared to 9999 (100%) for wildtype (Fig. 3B).

To further define the fermentation performance of the shortlisted candidates, the 30 best performing deletants the WYDL_LN screen (having the smallest AUC values of the wildtype, indicative of FE), were evaluated in triplicate 100 mL fermentations (Fig. 1). In the WYDL_HN, 12 deletants were observed to have an AUC of up to 9% less than the wildtype. The AUC values for the deletants were 4824 – 5284 (91-99%) compared to 5314 for the wildtype (Fig. 3A). The small reduction in fermentation duration can be attributed to the high amount of nitrogen (450 mg L^{-1}), which resulted in fermentation being completed in 68 h. However, in WYDL_LN (75 mg L^{-1}), 15 strains finished fermentation in a significantly shorter time (121 to 249 h compared to 293 for the wildtype; Fig. 3B). The deleted genes of these deletants were *TDA7, UBP7, AIM26, MFA2, UBC13, UBI4, MMS2, MRP17, MKT1, MVB12, AAT2, BRO1, INA1, TPK2* and *EAR1* (Peter et al. 2017). Four genes (*AAT2, YPR1, INA1,* and *MMS2*) of the 15 were also present within the 12 strains highlighted in the WYDL_HN fermentations.



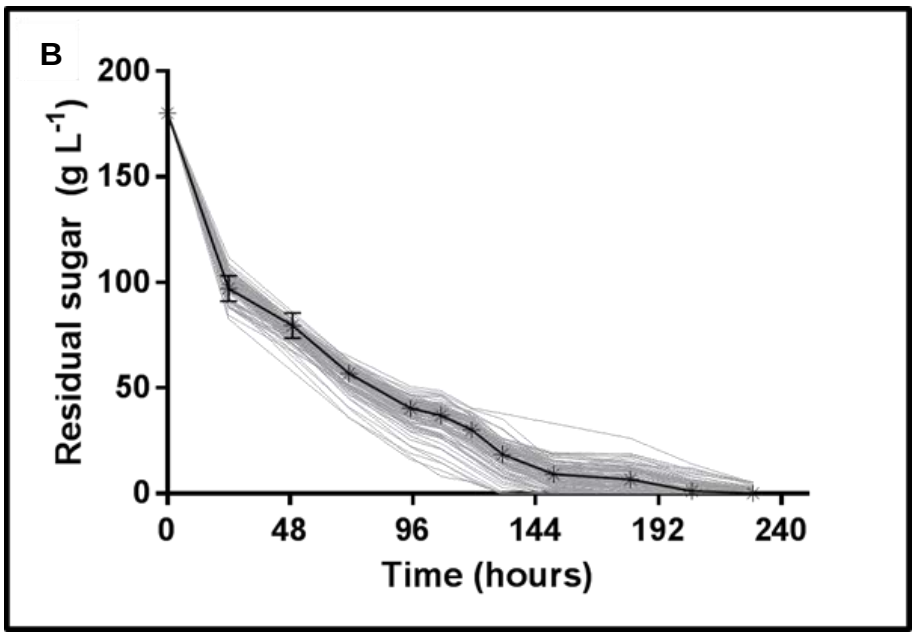


Figure 2. Sugar utilisation of the wildtype, AWRI1631 and 92 shortlisted deletants. Fermentations (100 mL) were conducted at 28 °C in CDGJM with **(A)** 450 mg L^{-1} (HN) and **(B)** 75 mg L^{-1} (LN). AWRI1631 (black line) 4 replicates and 92 deletants (grey lines) single cultures. The standard deviation of the mean is represented as error bars.

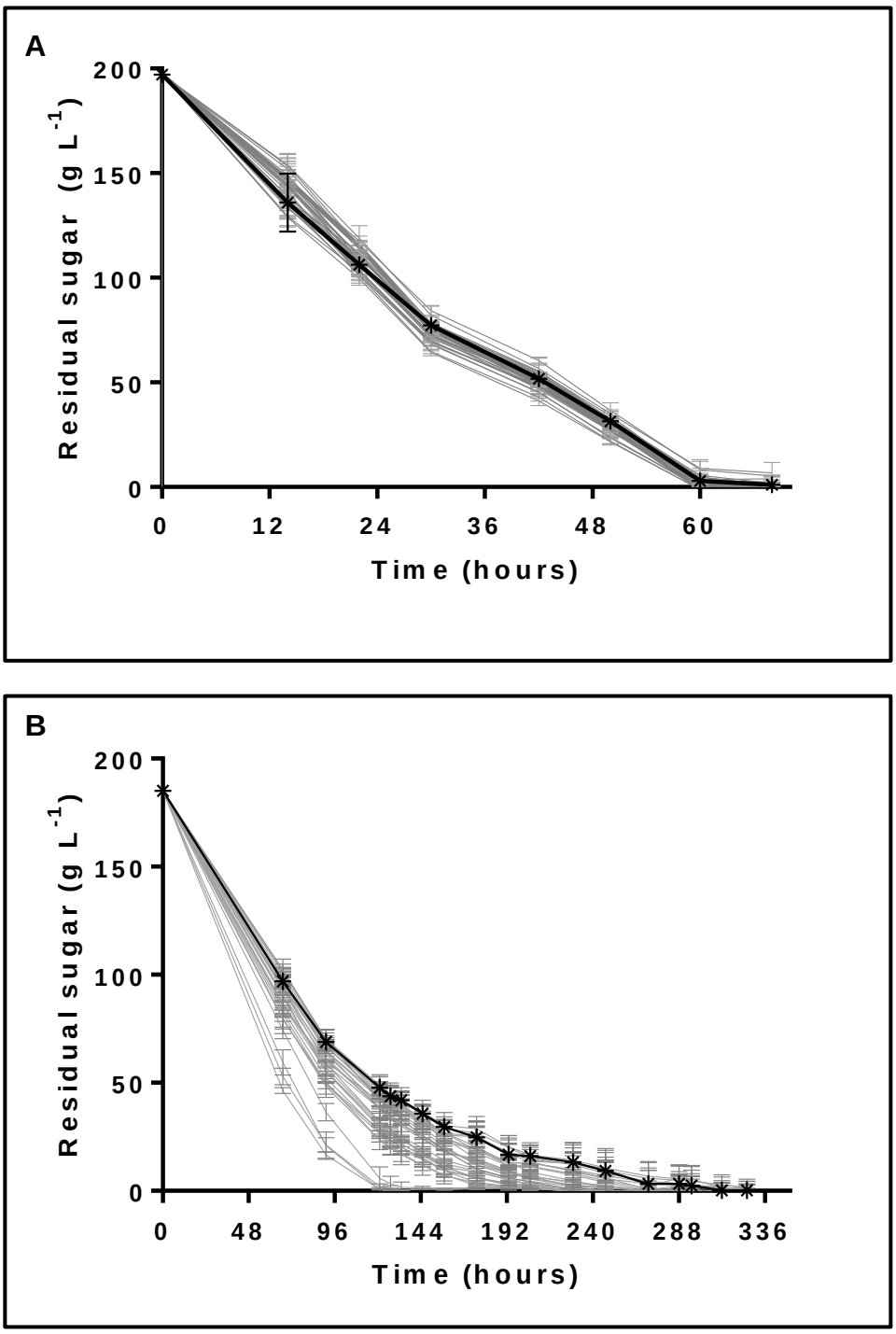


Figure 3. Sugar utilisation profile of the wildtype, AWRI1631 and 30 shortlisted deletants. Fermentations (100 mL) were conducted at 28 °C in CDGJM with **(A)** 450 mg L^{-1} (HN) and **(B)** 75 mg L^{-1} (LN). AWRI1631 (black line) and 30 deletants (grey lines). Standard deviation of the mean (triplicates) is represented as error bars.

In silico analysis of the FE gene set reveals genes common and unique to each micro-screen

Comparison of the FE deletants identified in all micro-fermentation screens (Screen I, Fig. 1) - WYDL (HN and LN) and LDYL (HN), revealed genes common and unique to each experimental condition (Fig. 4). Twenty four genes (as deletions) were common to all three data sets (Table 1). Furthermore, 27 genes were presented only in LYDL _HN and WYDL_HN, whilst 87 genes were present in the WYDL_HN and WYDL_LN data sets. Nineteen genes were also represented in both LYDL_HN and WYDL_LN data sets. A large number of genes identified as deletions capable of shortening fermentation, were exclusive to the individual screens: LYDL HN (748), WYDL_HN (161) and WYDL_LN (127). The gene deletant found in two or all data sets originating from the micro-fermentation screen are presented in Table 1.

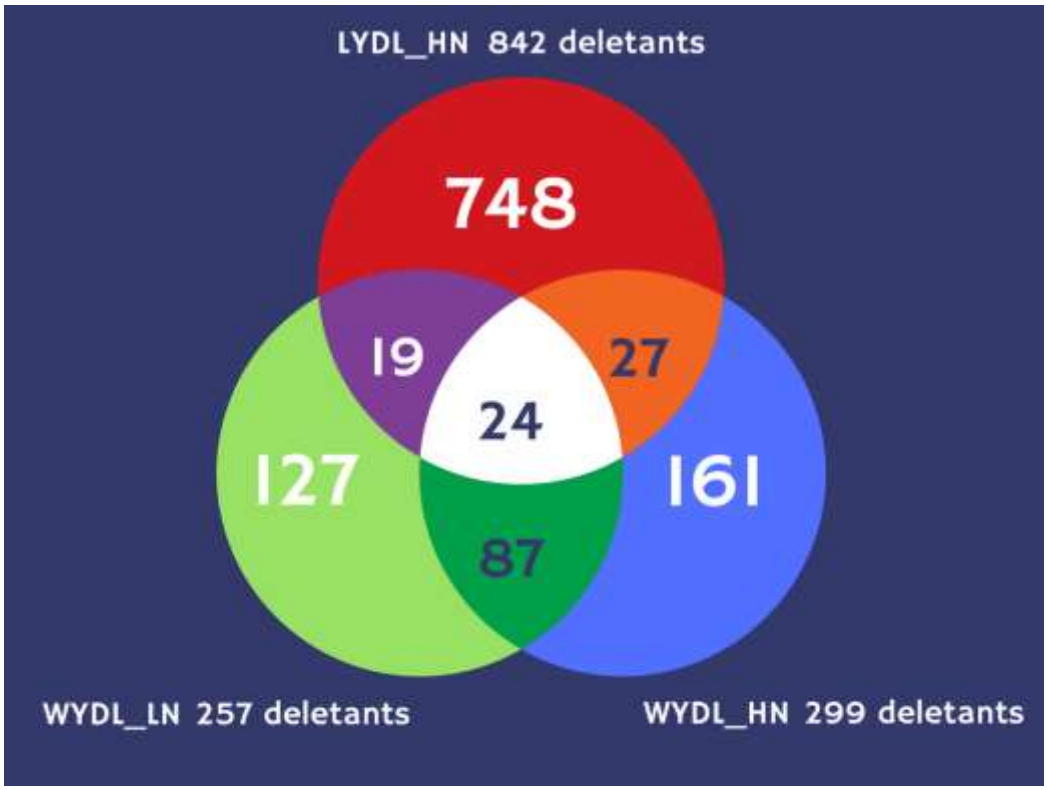


Figure 4. Comparison of the FE gene sets identified in the study. The Venn diagram shows common and unique FE deletants capable of fermenting twice more sugars than the wildtype during micro-fermentation of WYDL (HN and LN), and LYDL (HN).

Table 1. Genes of FE deletants in two or all data sets from the micro-fermentation screening of WYDL (HN and LN) and LYDL (HN)

Library Screen(s)	Identified Genes
WYDL_HN and WYDL_LN (87 genes)	***AAT2***, *AGE2, AIM25, AZF1, BEM2, BOL1, CCP1, CWH41, CYS4, DOA1, DOT5,* ***EAR1***, *EMC4, AU1, FLC3, FLO11, GGA1, GRX4, HAP5, HCS1, IGO1,* ***INA1***, *IST1, JID1, KAP122, KSS1, MAL32,* ***MFA2***, *MIT1,* ***MKT1***, *MPC1, MRH4,* ***MRP17***, *NAS2, NIS1, OAC1, OSM1, PBP1, PEP8, PEX31, PGM1, PHB1, PHB2, POM34, PTC2, RMD5, ROM1, SAK1, SAS5, SAY1, SHO1, SIP2, SMA1, SPP1, SPR2, SPT3, SWA2, SWP82,* ***TDA7***, *TPC1,* ***TPK2***, *TVP38, TWF1, UBC8,* ***UBP7***, *UBX3, VMA21, VMA3, VPS68, XPT1, YMC1, YPR1, YPT10, YRF1-3, YER137C, YIL055C, YKL070W, YKL071W, YKR051W, YGR015C, YGR168C, YMR254C, YOR225W, YPR063C, YPR071W,, YKL018C-A, YMR105W-A*
LYDL_HN and WYDL_HN (27 genes)	*AFT2, DLD1, DOG2, EMC5, FMP48, GET1, HSP150, HUT1, IDS2, KEL3, MEI5, MET10, MSH5, OPI3, OYE3, PPT2, RME1, SKG3, SLI1, STB5, TIM21, YDL114W, YGR045C, YGR051C, YOR062C, YPL191C, YPL247C*
common to LYL_HN, WYDL_HN and WYDL_ LN (24 genes)	*RAD16, TOG1, YLF2, CKA1, MSN4, VPS60,* ***MMS2***, *PDE1, BBC1, VPS55, ENT4, IOC2, FAR8, RSF1, GIS2, HXT14, SDD3, DBP1, MLH3, RPL7B, YHL008C, YGL082W, YGR066C, YGR237C*

Micro-fermentations (600 µL) were conducted in CDGJM as described in Materials and Methods. Deletants resulting in improved fermentation performance (i.e. fermenting twice more sugars than the wildtype) were shortlisted: WYDL_HN (299 genes), WYDL_LN (257 genes) and LYDL_HN (842 genes). Genes represented in 2 or 3 data sets are represented (Fig. 4). Genes denoted in bold represent the genes identified among the 15 genes, whose deletion shortened fermentation duration in CDGJM (LN; 75 mg L^{-1}; 100 mL fermentation; Screen III).

Gene Ontology and KEGG pathway analysis of the FE genes

The gene deletants identified in micro-screens as FE were classified using GO toolbox GO-Stats into specific Gene Ontology categories based on their role in biological processes. GO analysis of the 24 FE genes common to all the three micro-screens and the 27 FE genes represented in LYDL _HN and WYDL_HN highlighted enrichment for 7 different processes (Table 2 and 3). However, GO analysis of the 87 FE genes common to WYDL_HN and WYDL_LN, identified enrichment of genes that were for 34 different processes (Table 4). Kegg pathway analysis of this 87 FE genes highlighted 6 genes (*SHO1, BEM2, KSS1, ROM1, FLO11* and *MFA2*) that are targets of the MAPK (Mitogen Activated Protein Kinase) signalling pathway.Additionally, GO analysis of the 161 and 127 genes unique to WYDL_HN and WYDL_LN, respectively, identified enrichment of genes for process mainly involved in catabolic process and regulation in the HN (Fig. 5A) condition and in the LN conditions the data set was enriched for process such as ubiquination and protein turnover (Fig. 5B)

Table 2. GO enrichment analysis of the genes common to LYDL_HN, WYDL_HN and WYDL_LN.

GO_ID	TERM	P-VALUE	GENES
GO:0009214	cyclic nucleotide catabolic process	3.46E-03	*PDE1*
GO:0006198	cAMP catabolic process	3.46E-03	*PDE1*
GO:0019932	second-messenger-mediated signalling	4.56E-03	*PDE1, RSF1*
GO:0045324	late endosome to vacuole transport	6.48E-03	*VPS60, VPS55*
GO:0006821	chloride transport	6.90E-03	*YHL008C*
GO:0051599	response to hydrostatic pressure	6.90E-03	*MSN4*
GO:0050826	response to freezing	6.90E-03	*MSN4*

Table 3. GO enrichment analysis of the genes common to WYDL_HN and LYDL_HN.

GO_ID	TERM	P-VALUE	GENES
GO:0015785	UDP-galactose transport	3.78E-03	*HUT1*
GO:0050896	response to stimulus	4.60E-03	*AFT2, SLI1, DOG2, HSP150, STB5, GET1, OYE3, MEI5, MSH5, MET10*
GO:0007126	meiosis	4.71E-03	*MEI5, IDS2, MSH5, RME1*
GO:0051327	M phase of meiotic cell cycle	4.71E-03	*MEI5, IDS2, MSH5, RME1*
GO:0051321	meiotic cell cycle	4.79E-03	*MEI5, IDS2, MSH5, RME1*
GO:0042221	response to chemical stimulus	5.04E-03	*AFT2, SLI1, STB5, GET1, OYE3, MET10*
GO:0042493	response to drug	9.40E-03	*SLI1, STB5 ,MET10*

Table 4. GO enrichment analysis of the genes common to WYDL_HN and WYDL_LN.

GO_ID	TERM	P-VALUE	GENES
GO:0032511	late endosome to vacuole transport via multivesicular body sorting pathway	3.00E-05	*EAR1, IST1, GGA1, VPS68*
GO:0032509	endosome transport via multivesicular body sorting pathway	3.88E-05	*EAR1, IST1, GGA1, VPS68*
GO:0045861	negative regulation of proteolysis	4.19E-04	*PHB2, PHB1*
GO:0045324	late endosome to vacuole transport	7.73E-04	*EAR1, IST1, GGA1, VPS68*
GO:0016197	endosome transport	7.83E-04	*EAR1, IST1, PEP8, GGA1, VPS68*
GO:0042177	negative regulation of protein catabolic process	8.28E-04	*PHB2, PHB1*
GO:0009895	negative regulation of catabolic process	8.28E-04	*PHB2, PHB1*
GO:0006511	ubiquitin-dependent protein catabolic process	1.17E-03	*RMD5, DOA1, UBP7, EAR1, SWP82, NAS2, UBC8, GGA1*
GO:0043328	protein targeting to vacuole during ubiquitin-dependent protein catabolic process via the MVB pathway	1.36E-03	*EAR1, GGA1*
GO:0065007	biological regulation	1.46E-03	*PTC2, SAK1, NIS1, AZF, RMD5, MKT1, YRF1-3, SIP2, MFA2, SHO1, TPK2, SPP1, KAP122, ROM1, SAS5, TWF1, BEM2, DOT5, SWP82, PHB2, HAP5, PBP1, AGE2, KSS1, VMA21, SPT3, PEP8, AIM25, PHB1, UBC8, GRX4, PGM1, YPT10*
GO:0019941	modification-dependent protein catabolic process	1.50E-03	*RMD5, DOA1, UBP7, EAR1, SWP82, NAS2, UBX3, UBC8, GGA1*
GO:0043632	modification-dependent macromolecule catabolic process	1.81E-03	*RMD5, DOA1, UBP7, EAR1, SWP82, NAS2, UBX3, UBC8, GGA1*
GO:0050789	regulation of biological process	1.90E-03	*PTC2, SAK1, NIS1, AZF1, RMD, MKT1, SIP2, MFA2, SHO1, TPK2, SPP1, ROM1, SAS5, TWF1, BEM2, DOT5, SWP82, PHB2, HAP5, PBP1, AGE2, KSS1, VMA21, SPT3, AIM25, PHB1, UBC8, GRX4, PGM1, YPT10*
GO:0051603	proteolysis involved in cellular protein catabolic process	1.91E-03	*RMD5, DOA1, UBP7, EAR1, SWP82, NAS2, UBX3, UBC8, GGA1*
GO:0040007	growth	1.91E-03	*SIP2, SHO1, TPK2, ROM1, BEM2, KSS1, SPT3*

GO:0042221	response to chemical stimulus	1.98E-03	*PTC2, AZF1, SAY1, MFA2, YKL070W, CCP1, KAP122, CYS4, DOT5, YPR1, KSS1, YKL071W, GRX4*
GO:0032269	negative regulation of cellular protein metabolic process	2.03E-03	*TWF1, PHB2, PHB1*
GO:0050794	regulation of cellular process	2.25E-03	*PTC2, SAK1 ,NIS1, AZF1, RMD5, MKT1, SIP2, MFA2, SHO1, TPK2, SPP1, ROM1, SAS5, TWF1, BEM2, DOT5, SWP82, PHB2, HAP5, PBP1, AGE2, KSS1, VMA21, SPT3, PHB1, UBC8, GRX4, PGM1, YPT10*
GO:0007165	signal transduction	2.34E-03	*PTC2, SIP2, MFA2, SHO1, TPK2, ROM1, BEM2, AGE2, KSS1, YPT10*
GO:0001403	invasive growth in response to glucose limitation	2.40E-03	*SIP2, TPK2, KSS1, SPT3*
GO:0030162	regulation of proteolysis	2.80E-03	*PHB2, PHB1*
GO:0051248	negative regulation of protein metabolic process	2.96E-03	*TWF1, PHB2, AIM25 ,PHB1*
GO:0007034	vacuolar transport	3.44E-03	*EAR1, TVP38, IST1, PEP8, GGA1, VPS68*
GO:0051246	regulation of protein metabolic process	4.14E-03	*PTC2, SAK1, MKT1, MFA2, TWF1, BEM2, PHB2, PBP1, VMA21, AIM25, PHB1, UBC8, PGM1*
GO:0007166	cell surface receptor linked signal transduction	4.32E-03	*PTC2, MFA2, SHO1, KSS1*
GO:0045721	negative regulation of gluconeogenesis	4.68E-03	*RMD5, UBC8*
GO:0006508	proteolysis	6.54E-03	*RMD5, DOA1, UBP7, EAR1, SWP82 ,PHB2, NAS2, UBX3, PHB1, UBC8, GGA1*
GO:0051181	cofactor transport	6.99E-03	*FLC3, TPC1*
GO:0006109	regulation of carbohydrate metabolic process	7.43E-03	*RMD5, HAP5, UBC8*
GO:0030447	filamentous growth	7.44E-03	*SIP2, SHO1, TPK2, KSS1, SPT3*
GO:0045912	negative regulation of carbohydrate metabolic process	8.29E-03	*RMD5, UBC8*
GO:0010677	negative regulation of cellular carbohydrate metabolic process	8.29E-03	*RMD5, UBC8*
GO:0080090	regulation of primary metabolic process	8.51E-03	*PTC2, SAK1, AZF1, RMD5, MKT1, MFA2, SPP1, SAS5, TWF1, BEM2, DOT5, SWP82, PHB2, HAP5, PBP1, KSS1, VMA21, SPT3, AIM25, PHB1, UBC8, PGM1*
GO:0007154	cell communication	8.57E-03	*PTC2, SIP2, MFA2, SHO1, TPK2, ROM1, BEM2, AGE2, KSS1, YPT10*

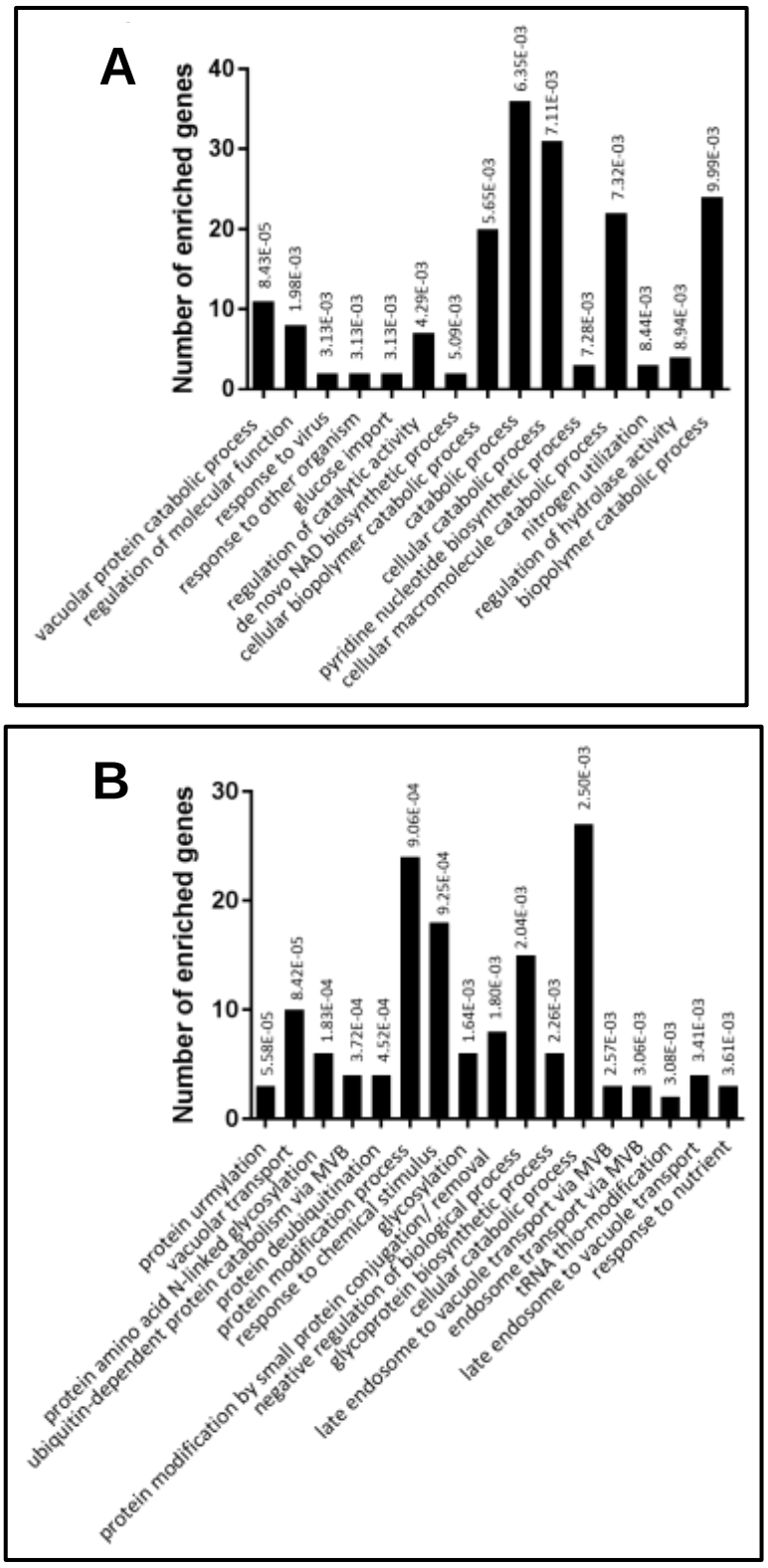


Figure 5. Enrichment of FE genes annotated to specific GO terms from SGD using GO ToolBox GO-Stats. Number of genes found in the indicated GO term which shows significant enrichment under the two growth conditions. **(A)** Genes specific to WYDL_HN. **(B)** Genes specific to WYDL_LN. P-value marked above each bar indicates significance of enrichment.

Genes influencing fermentation efficiency that are unique to each experimental screen and influenced by genotype, environment or both

Large number of FE deletants identified in the micro-fermentation were unique to each screen (Fig. 4): 748 (LYDL_HN), 161 (WYDL_HN) and 127 (WYDL_LN).

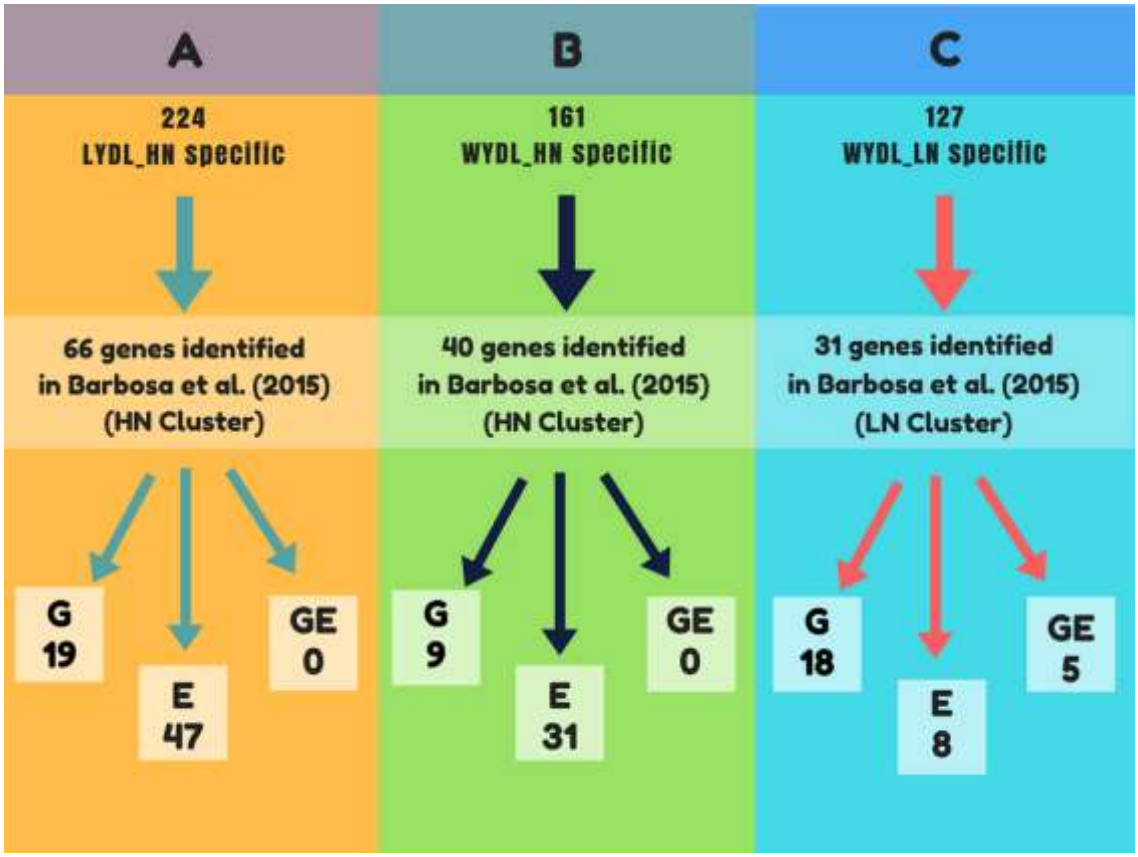


Figure 6. Comparison of FE genes (Screen I) to genes affected by Genotype (G), Environment (E) or both (GE) under HN and LN conditions, as reported by Barbosa et al. (2015). **(A)** LYDL_HN genes identified in the HN condition. **(B)** WYDL_HN genes identified in the HN condition. **(C)** WYDL_LN genes identified in the LN condition.

The identified 161 and 127 FE deletants in the WYDL are likely to be affected by Environment (E; high and low nitrogen). Comparison of the LYDL_HN data set to the WYDL, which represents only 30% of the LYDL, revealed that 73% (548 deletants of the 748 identified as FE and unique to this screen) were not present in the WYDL_HN and the remaining 224 did not exhibit improved fermentation in the WYDL. Therefore the 224 genes are likely to be dependent on Genotype (G). Comparative transcriptomic analysis of wine yeast strains CEG, VL1 and QA23 by Barbosa et al. (2015) identified genes whose expression was influenced by Genotype (G), Environment (E; high and low nitrogen availability) and both Genotype and Environment (GE). Comparison of genes unique to each screen identified in our study, which are likely to be dependent on G and E to clusters reported by Barbosa et al. (2015) as influenced by G, E and GE,

in HN and LN, identified in HN, 19 and 47 (from LYDL) and 9 and 31 (from WYDL) genes to be affected by G and E, respectively, and in LN, 18, 8 and 5 (from WYDL) genes to be affected by G, E and GE, respectively (Fig. 6, Table 5).

Table 5. Fermentation efficient genes influenced by Genotype (G), Environment (E) and interaction between both (GE)

Genes dependency	Genes
Genotype in HN: 19 genes	*YBR214W (SDS24), YCL032W (STE50), YEL003W (GIM4), YHL021C (AIM17), YHL022C (SPO11), YHR154W (RTT107), YHR156C (LIN1), YKL010C (UFD4), YJR109C (CPA2), YJR110W (YMR1), YJR111C (PXP2), YLR267W (BOP2), YOL110W (SHR5), YOR197W (MCA1), YOR221C (MCT1), YOR323C (PRO2), YPR040W (TIP41), YPL107W, YPL162C*
Environment in HN: 31 genes	*YGR061C (ADE6), YDL156W (CMR1), YGL191W (COX13), YIR032C (DAL3), YDL178W (DLD2), YPR023C (EAF3), YDL234C (GYP7), YFR024C-A (LSB3), YGL086W (MAD1), YPR167C (MET16), YFR011C (MIC19), YLR265C (NEJ1), YGL013C (PDR1), YDL093W (PMT5), YGL037C (PNC1), YGR123C (PPT1), YER185W (PUG1), YKL038W (RGT1), YPL208W (RKM1), YER161C (SPT2), YGR129W (SYF2), YPR133W-A (TOM5), YFR007W (YFH7), YHR132C (ECM14), YDL175C (AIR2), YDL243C (AAD4), YFR024C-A (LSB3), YDL144C, YLL053C, YGL242C, YPR148C*
Environment in LN: 8 genes	*YDR370C (DXO1), YDR379W (RGA2), YGR162W (TIF4631), YGR232W (NAS6), YJR124C (MGR2), YLR052W (IES3), YPR069C (SPE3), YJR124C*
GE interaction in LN: 5 genes	*YIL015W (BAR1), YIL041W (GVP36), YGR112W (SHY1), YLL039C (UBI4), YPL084W (BRO1)*

***In silico* analysis of 257 genes whose deletion confers improved fermentation under limited nitrogen in a wine yeast**

The 257 FE genes (Screen I: WYDL_LN micro-screen), were compared to genes down-regulated under different nitrogen conditions, reported in several transcriptomic studies (Marks et al. 2003; Scherens et al. 2006; Mendes-Ferreira et al. 2007b; Contreras et al. 2012; Barbosa et al. 2015). A total of 39 genes were down-regulated in response to either nitrogen content or composition, or yeast nitrogen requirement (Table 6). Among the 39, 14 and 10 genes were identified to be down-regulated in LN (66 - 67 mg L^{-1}) in the studies conducted by Barbosa et al. (2015) and Mendes-Ferreira et al. (2007b), respectively. Further, 13 genes were down-regulated upon DAP addition following nitrogen starvation (Marks et al. 2003), 6 genes in different nitrogen sources (Scherens et al. 2006) and 3 genes down-regulated in strains of differing nitrogen requirement (Contreras et al. 2012).

Table 6. Thirty nine genes identified in this study that are down-regulated in response to nitrogen content, composition, or yeast requirement

Transcriptomic Study	Down-regulated genes
Low Nitrogen 67 mg L^{-1}: 14 genes, Barbosa et al. (2015)	***YLR413W (INA1),*** *YIL085C (KTR7), YLR150W (STM1), YMR265C, YER156C,* ***YLL039C (UBI4)****, YNL255C (GIS2), YBL024W (NCL1), YPR063C, YPL198W (RPL7B), YFR032C-A (RPL29), YOR213C (SAS5), YGR283C, YBL028C*
Differing nitrogen sources i.e. glutamine, proline, rapamycin: 6 genes, Scherens et al. (2006)	***YLR027C (AAT2)****,* ***YLR413W (INA1)****, YGR155W (CYS4), YDR385W (EFT2), YGR155W, YDR385W*
Different nitrogen requirement HN and LN strain: 3 genes, Contreras et al. (2012)	*YNL190W, YNL229C (URE2), YJR102C (VPS25)*
Nitrogen-starvation/low nitrogen 66 mg L^{-1}: 10 genes, Mendes-Ferreira et al. (2007b)	*YIL035C (CKA1), YKL120W (OAC1), YJR102C (VPS25), YGR105W (VMA21), YBL024W (NCL1), YLR292C (SEC72), YGR085C (RPL11B), YJR124C,* ***YLR413W (INA1)****, YNL084C (END3)*
DAP addition 20% w/v DAP addition after 30% sugars were consumed: 13 genes, Marks et al. (2003)	*YEL012W (UBC8), YER167W (BCK2), YIL055C , YDR320C (SWA1), YDR386W (MUS81),* ***YGL087C (MMS2)****, YGR105W (VMA21),* ***YGR206W (MVB12)****,* ***YPL203W (TPK2)****, YDL091C (UBX3), YDR392W (SPT3), YGR066C, YPR061C (JID1)*

257 FE genes identified in the WDYL_LN micro-fermentation (Fig. 1) were compared with genes highlighted in transcriptomic studies, specifically those down-regulated in response to different nitrogen content, composition or yeast nitrogen requirement. Reported are the genes from previous studies that were also identified in this study as were down-regulated. Genes in bold were shown to have improved fermentation efficiency under LN conditions in 100 mL fermentations (Fig. 3B)

2.4 Discussion

Micro-fermentation of prototrophic deletion libraries to identify genes that confer fermentation efficiency under different nitrogen conditions

Two prototrophic yeast deletion libraries were used to identify genes, whose deletion conferred fermentation efficiency under high (450 mg L^{-1}) and low (75 mg L^{-1}) nitrogen conditions (Fig. 1). The LYDL (5372 deletants), represented most of the non-essential genes in the genome, with prototrophy being restored by plasmid complementation (pHLUM; Mülleder et al. 2012). The WYDL (1844) constructed in a prototrophic wine yeast, AWRI1631 (Borneman et al. 2008; Varela et al. 2012), represented 30% of the LYDL. A preliminary screen was undertaken (Screen I: LYDL_HN, Appendix 1, Pg 108), but because of observed pHLUM plasmid loss from the relatively rich CDGJM, further screen in this medium (i.e. LYDL_LN) was abandoned. Instead, screening

was undertaken using the WDYL under both conditions (Appendix 2 and 3, Pg 149 and 163), with the LYDL_HN data used to verify potential gene candidates, including those absent in the WYDL.

Laboratory-scale fermentation of the shortlisted candidates

Ninety-two of the best performing strains from each of the WYDL micro-screens (HN and LN) were evaluated unreplicated as 100 mL fermentations (Screen II; Fig. 2A and 2B). In the HN condition, fermentation duration was expected to be comparable between deletants and wildtype, as nitrogen was non-limiting. Therefore, FE deletants were instead defined as those that completed fermentation with a smaller AUC and nitrogen consumption. In the LN condition, deletants that were able to complete fermentation in a shorter duration were considered FE. In this way, 30 of the best performing candidates were chosen from each of the conditions (HN and LN) and evaluated in triplicated 100 mL fermentations incorporating a standardised inoculation rate (Screen III; Fig. 3A and 3B). Of the 30, we identified 15 deletants in AWRI1631 (i.e. 16% of those tested) that completed fermentation in a significantly shorter time under LN conditions; ranging from 41 to 78% of the wildtype. These candidates, warranted further investigation and are potential targets for strain improvement (Fig. 3B; Peter et al. 2017).

In screen III of the 30 best-performing wine yeast deletants under HN conditions, fermentation was rapid (67 h) due to the ready availability of nitrogen, therefore, only minor differences existed between fermentations completed prior to the wildtype (Fig. 3A). However, lowering of the fermentation temperature from 28 °C to 22 °C as well as reducing the nitrogen concentration to levels similar to industrial fermentations (i.e. 300-350 mg L^{-1}), was intended to provide better differentiation in fermentation performance between strains.

***In silico* analysis of the FE gene sets from the micro-fermentations**

In micro-fermentation (Screen I), a cut-off based on deletants that were able to ferment twice the sugar of the wildtype at the same time point(s), were used to identify yeast gene deletants, which conferred fermentation efficiency. Deletants with this phenotype totalled 842 (LYDL_HN; Appendix 4, Pg 177), 299 (WYDL_HN; Appendix 5, Pg 184) and 257 (WYDL_LN; Appendix 6, Pg 187). *In silico* comparison of these gene sets identified common and unique genes (Fig. 4). Interestingly, 24 genes were common to all three groups (Table 1), suggesting that these genes are capable of reducing fermentation duration independent of background and nitrogen conditions. The presence of 27 genes in the WYDL_HN and LYDL_HN (Table 1) indicates that these genes influence FE independent of strain background. These genes may be viewed as environment (condition) dependent as they result in FE in both the LYDL_HN and WYDL_HN but

are not present in the WYDL_LN data set (discussed below). However, this idea cannot be confirmed, as the LYDL_LN screen was not undertaken. Eighty seven genes were identified as conferring fermentation efficiency regardless of nitrogen content (WYDL HN and WYDL LN; Table 1). As such these genes seem unlikely to be directly related to nitrogen metabolism but perhaps play a role in tolerance to high sugar conditions. These gene deletions are potential targets for yeast strain improvement specifically for high sugar fermentations, an increasingly common problem of oenological fermentation. Finally, nine genes of this set (Table 1: 87 genes; *AAT2, EAR1, INA1, MFA2, MKT1, MRP17, TDA7, UBP7* and *TPK2*) and *MMS2* (Table 1: 24 genes) were amongst the 15 deletants capable of significantly reducing fermentation duration in 100 mL trials (Screen III: WYDL_LN; Peter et al. 2017).

Classification of genes into specific Gene Ontology categories identifies enrichment in the 87 genes common to WYDL_HN and WYDL_LN

GO Toolbox GO-Stats calculates the statistically relevant over-representation (or enrichment) of GO terms associated with a gene set, relative to the genomic distribution of GO terms. An enrichment of genes in a set annotated to a particular GO term implies the importance of that GO cluster to fermentation completion. Classification of genes using this tool, based on their role in a biological process (Martin et al. 2004) revealed an enrichment for genes that were for a process. GO analysis of the 87 FE genes common to the WYDL_HN and WYDL_LN conditions highlighted enrichment for 34 different processes (Table 4). Of the observed enrichment, we identified a set of genes involved in cell communication (*PTC2, SIP2, MFA2, SHO1, TPK2, ROM1, BEM2, AGE2, KSS1* and *YPT10*; Table 4). Further Kegg pathway analysis of the 87 FE genes highlighted 6 genes (*SHO1, BEM2, KSS1, ROM1, FLO11* and *MFA2*), which were associated with cell communication and also target of the MAPK (Mitogen Activated Protein Kinase) signalling pathway (Fig. 7). The MAPK pathway is an intracellular signalling pathway that helps yeast sense and adapt to a changing environment. The MAPK pathway is a cascade of three sequentially activating kinases; a MAPK kinase kinase (MAPKKK), which activates the MAPK kinase (MAPKK), which activates MAPK. *Saccharomyces cerevisiae* has at least five signalling pathways that contain the MAP kinase cascade (Levin and Errede 1995; O'Rourke and Herskowitz 1998). The 6 genes highlighted in the Kegg pathway analysis are involved in the following MAPK pathways; Pheromone response pathway *(MFA2,* mating a-factor and *FUS3*), Cell wall integrity pathway (*BEM2),* High Osmolarity Glycerol (HOG) pathway (*SHO1*) and Filamentous growth pathway (*KSS1* and *FLO11*) (Saito and Tatebayashi 2004; Saito 2010). Further investigation of these genes

and others in the pathway is required to understand how their deletion confers fermentation efficiency.

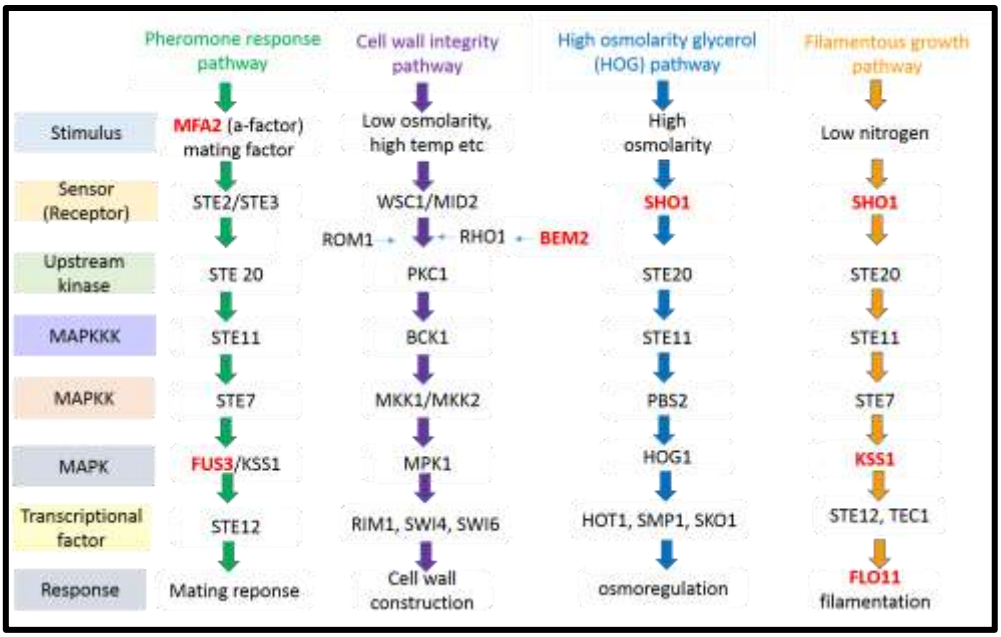


Figure 7. Yeast signalling pathways involving MAPK. Four of the MAPK signalling pathways (Pheromone response pathway, green; Cell wall integrity pathway, purple; High Osmolarity Glycerol (HOG) pathway, blue and Filamentous growth pathway, orange) are targets in the pathway from external stimulation to response by the yeast cells. Genes identified as FE from the WYDL_HN and WYDL_LN are shown in red (adapted from Saito and Tatebayashi 2004).

Genes that confer fermentation efficiency, only in one condition.

GO analysis of the genes specific to WYDL_HN (161) and WYDL_LN (127) identified enrichment of genes for processes associated with cellular catabolic process and regulation in HN and ubiquitination and protein turnover in the LN condition (Fig. 5A and 5B). These findings suggest that under LN conditions, removal of key proteins within the ubiquitin protein degradation pathway may slow turnover of transporters and other proteins critical to maintaining cellular metabolism thereby enabling rapid fermentation. Nitrogen depletion occurs approximately halfway through exponential growth, irrespective of initial nitrogen (Varela et al. 2004). During the late stationary phase, yeast requires energy mainly for cell maintenance in response to diffusion of ions into the cytoplasm due to increasing ethanol content, and for protein turnover due to nitrogen depletion (Varela et al. 2004). In another study, Canelas et al. (2010) proposed that as protein synthesis is an energy consuming process requiring more ATP, strains increase glycolytic flux by driving more ATP and co-factors into protein synthesis. Nevertheless, deletion of genes associated with protein degradation could result in energy saving by reducing protein turnover and extending

the presence of transporter(s)/ion pump(s) in the plasma membrane thereby allowing continued sugar uptake and glycerol efflux. An increased sugar uptake could increase ATP production to support proton and ion homeostasis during ethanol stress (Alexandre et al. 2001; Viana et al. 2012; Fig. 8A and 8B).

Although the start of nitrogen depletion triggers enormous physiological changes such as autophagy, nitrogen recycling, decrease of protein synthesis and the storage of glycogen and trehalose (Rossignol et al. 2003; Brice et al. 2013), the mechanisms involved in sensing external nitrogen and initiating a cellular response to combat nitrogen starvation remain unclear. Interestingly, there are distinct genetic mechanisms by which yeast with differing nitrogen requirement respond to nitrogen limitation/starvation (Brice et al. 2013). In yeast requiring HN, genes related to protein degradation, nitrogen recycling and the stress response are upregulated, whilst in LN requiring yeast, it is those related to synthetic processes such as protein synthesis and RNA processing that are upregulated (Brice et al. 2014). Although the nitrogen requirement profile of AWRI1631 is unknown, it would appear that deletion of genes related to catabolism has a positive but minor effect when yeast are grown with HN, whereas in the LN conditions, dysfunctional ubiquitin-mediated protein turnover is more effective.

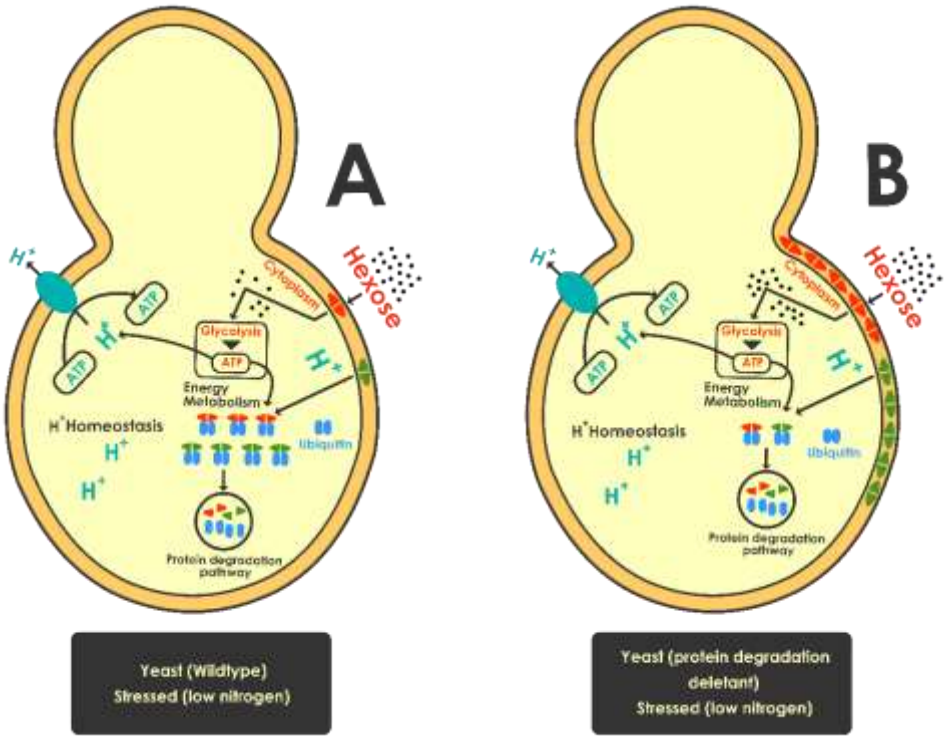


Figure 8. Yeast metabolism (glycolysis, protein degradation and H^+ homeostasis) in LN fermentations. (A) In the wildtype; transporters on the plasma membrane mediate nutrient transfer (hexose transporters , amino acid and nitrogen transporters) across the cell membrane. Transported hexoses are metabolised through the glycolytic pathway producing energy (ATP). When limited nitrogen is available these transporters are down-regulated and degraded, thus fewer are available. The protein degradation pathway aids protein turnover during nitrogen depletion and the H^+ ATPase ( ) pumps H^+ ions out of the cell during ethanol stress, which requires energy. (B) It is proposed in deletants of protein degradation pathway genes, protein degradation is reduced enabling more transporters to be present on the plasma membrane to actively transport more sugars resulting in more energy to be used for other activities such as H^+ homeostasis, cell maintenance and fermentation performance.

Barbosa et al. (2015), in a comparative transcriptomic analysis of 3 wine yeast (CEG, VL1 and QA23) in HN and LN fermentation conditions, classified genes into different clusters dependent on whether their pattern of expression was affected by Genotype (G; strain-specific), Environment (E; mechanism-specific) or both Genotype and Environment (GE). The genes specific to each screen (161, WYDL_HN; 127, WYDL_LN and 224, LYDL_HN) were compared to the HN and LN clusters reported by Barbosa et al. (2015) (Fig. 6). Nineteen of the 224 FE genes (LYDL_HN), shown to be FE specifically in the laboratory yeast, can be considered as genotype specific as their deletion did not result in FE in the WYDL_LN (Table 6, Fig. 6). Barbosa et al. (2015) demonstrated differential expression of these 19 genes depending on wine strain. Of the 19 genes, 6 genes (*STE50, SDS24, LIN1, MCA1, RTT107* and *AIM17*) represented significant enrichment for processes associated with stress response. The genes from the WYDL_HN (161) and WYDL_LN (127) may be environment (in this case, nitrogen) dependent given the differences

in nitrogen availability in these media. In the two respective screens, 31 and 8 genes were also identified as affected by the environment by Barbosa et al. (2015) (Table 5). Enriched GO terms of these 31 genes were mainly related to negative regulation of cellular processes such as transcription, metabolism, gene expression and biosynthesis (*PDR1, SPT2, EAF3, MAD1, PNC1, and RGT1*), regulation of glucose transport (*RGT1*) and sulfate reduction (*MET16*). The identified 8 genes highlighted enrichment for processes such as spermidine metabolism (*SPE3*), proteasome regulatory (*NAS6*) and stress granule assembly (*TIF4631*). Similar to Barbosa et al. (2015), in this study the number of genes identified to be affected by environment in HN (161 and 31 genes) was comparatively more than in the LN (127 and 8 genes) condition. In LN fermentations, early depletion of nitrogen allows yeast cells to adjust growth rate to limited nitrogen and maintain homeostasis. In this case, transcriptional levels are more stable in LN when compared to HN fermentations (Barbosa et al. 2015), therefore deleting a gene that is highly active during HN fermentation could possibly affect the sugar uptake or catabolic pathway enabling fermentation proficiency. However, these genes require further investigation, to elucidate the underlying mechanisms behind fermentation efficiency and nitrogen availability.

Interestingly, 5 genes identified as FE (WYDL_LN) were reported by Barbosa and co-workers (2015) as influenced by GE (Table 6). The authors suggest that those genes affected by GE interaction, respond differently to the situation depending on the strain. These genes are referred to as being genetically variable for transcriptional plasticity (Landry et al. 2006; Barbosa et al. 2015). In this study, this gene set was significantly enriched for the processes of ubiquitination, protein turnover (*UBI4* and *BRO1*) and peptide catabolism (*BAR1*).

Comparison of the WYDL_LN genes that result in reduced fermentation duration when deleted with published transcriptomic data sets

The 257 genes identified in the WYDL_LN micro-screen as FE upon deletion, were compared to down-regulated genes from transcriptional studies conducted in various nitrogen conditions (Marks et al. 2003; Scherens et al. 2006; Mendes-Ferreira et al. 2007b; Contreras et al. 2012; Barbosa et al. 2015). 39 genes were matched to the collated transcriptomic data (Table 6). These gene deletions enabling fermentation efficiency in this study have also been shown to be down-regulated in circumstances of different nitrogen conditions, suggesting that the expression of these genes are down-regulated in adverse conditions such as limiting nitrogen. Further investigation of these genes is needed to explore the mechanism that assists in adaptation to LN conditions and improved fermentation performance. Further, these strains could be targets for yeast strain improvement specific for LN conditions.

2.5 Conclusion

Screening of the prototrophic deletion libraries in this study identified interesting genes that confer fermentation efficiency upon deletion in high and low nitrogen conditions. 161 genes (WYDL_HN) were specifically over represented for cellular catabolic process and regulation and 127 genes (WYDL_LN) that were related to ubiquitination and protein turnover. In addition, 87 genes common to the WYDL_HN and WYDL_LN conditions, several genes were enriched for protein degradation. In general, these findings suggest that deletion of genes associated with protein degradation pathways such as transport (via endosome/vacuoles) and catabolism confer improved fermentation phenotype. Deletion of genes such as *BRO1* (Nikko et al. 2003), *MVB1 (*Oestreich et al. *2007)* and *EAR1* (Léon et al. 2008) have been previously shown to interfere with the degradation of amino acid permeases. This occurs either by hindering movement of these permeases (Gap1p) to the vacuolar lumen (*ear1*Δ, Leon et al. 2008) or recycling Gap1p to the cell membrane without ubiquitination in the presence of ammonium (Nikko et al. 2003). However, it is not known if these and other gene deletions identified in this study affect the degradation of other amino acid permeases or amino acid catabolic enzymes. Both could play a role in the observed enhanced fermentation performance. Furthermore, of the genes whose deletion was identified to confer FE in WYDL_LN, *INA1, UBI4*, *MMS2, MVB12* and *TPK2* have been shown to be down-regulated in prototrophic wine yeast (Marks et al. 2003; Mendes-Ferreira et al. 2007a; Barbosa et al. 2015) and *INA1* and *AAT2* have been shown to be down-regulated in BY4741 (laboratory strain; Scherens et al. 2006) during fermentation under different N conditions. Likewise, genes such as *BRO1* and *UBI4* are referred to as being genetically variable for transcriptional plasticity (Landry et al. 2006; Barbosa et al. 2015). For instance, these genes respond differently to environment based on the genotype of the strain. Further investigations of these genes are required to better understand how their deletion confers fermentation efficiency. These questions are worth further investigations to extend to the knowledge of fermentation efficiency.

CHAPTER 3

Use of a wine yeast deletion collection reveals genes that influence fermentation performance under low nitrogen conditions

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Principal Author

Name of Principal Author (Candidate)	Josephine Jasmine Peter
Contribution to the Paper	Designed and performed experiments, analysed data and interpreted data and drafted/ constructed manuscript
Overall percentage (%)	70
Certification:	This paper reports on original research I conducted during the period of my Higher Degree by Research candidature and is not subject to any obligations or contractual agreements with a third party that would constrain its inclusion in this thesis. I am the primary author of this paper.
Signature	Date: 20/8/2017

Co-Author Contributions

By signing the Statement of Authorship, each author certifies that:

i. the candidate's stated contribution to the publication is accurate (as detailed above);
ii. permission is granted for the candidate in include the publication in the thesis; and
iii. the sum of all co-author contributions is equal to 100% less the candidate's stated contribution.

Name of Co-Author	Tommaso L.Watson
Contribution to the Paper	Oversaw the experimental design, supervised the research and revised the manuscript
Signature	Date: 8/8/2017

Name of Co-Author	Michelle E. Walker
Contribution to the Paper	Oversaw the experimental design, supervised the research and revised the manuscript
Signature	Date: 7/8/2017

Name of Co-Author	Jennie M. Gardner
Contribution to the Paper	Oversaw the experimental design, supervised the research and revised the manuscript.
Signature	Date 10/8/17

Name of Co-Author	Tom A. Lang
Contribution to the Paper	Confirmed the identity of strains *EAR1* and *MRP17* and provided inputs about the importance of them.
Signature	Date 8/8/17

Name of Co-Author	Anthony Borneman
Contribution to the Paper	Part of the group who designed and constructed the wine yeast deletion library.
Signature	Date 8/8/17

Name of Co-Author	Angus Forgan
Contribution to the Paper	Part of the group who designed and constructed the wine yeast deletion library.
Signature	Date 9/8/17

Name of Co-Author	Tina Tran
Contribution to the Paper	Part of the group who designed and constructed the wine yeast deletion library.
Signature	Date 14/08/17

Name of Co-Author	Vladimir Jiranek
Contribution to the Paper	Oversaw the experimental design, supervised the research, revised the manuscript and submitted the manuscript as corresponding author.
Signature	Date 9.8.17.

Use of wine yeast deletion collection reveals genes that influence fermentation performance under low nitrogen conditions

Josephine J. Peter[1], Tommaso L. Watson[1], Michelle E. Walker[1], Jennie M. Gardner[1], Tom A. Lang[1], Anthony Borneman[2], Angus Forgan[2], Tina Tran[2,#] and Vladimir Jiranek[1*]

[1]Department of Food and Wine Science, The University of Adelaide, PMB 1 Glen Osmond, SA 5064, Australia; [2]The Australian Wine Research Institute, PO Box 197, Glen Osmond, SA 5064, Australia.

[#]Current address: AB Biotek, 1 Richardson Place, North Ryde, NSW 2113, Australia.

[*]Corresponding author:
Professor Vladimir Jiranek
Department of Food and Wine Science
The University of Adelaide
Urrbrae, SA 5064
Australia
Tel.: +61 8 313 5561
Fax: +61 8 313 7415
Email: vladimir.jiranek@adelaide.edu.au

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3.1 Abstract

A deficiency of nitrogenous nutrients in grape juice can cause stuck and sluggish alcoholic fermentation, which has long been a problem in winemaking. Nitrogen requirements vary between wine yeast strains, and the ability of yeast to assimilate nitrogen depends on the nature and concentration of nitrogen present in the medium. In this study a wine yeast gene deletion collection (1844 deletants in the haploid AWRI1631 background) was screened to identify genes whose deletion resulted in a reduction in the time taken to utilise all sugars when grown in a chemically defined grape juice medium supplemented with limited nitrogen (75 mg L^{-1} as a free amino acid mixture). Through micro-scale and laboratory-scale fermentations 15 deletants were identify that completed fermentation in a shorter time than the wildtype (*c.a.* 15-59% time reduction). This group of genes was annotated to biological processes including protein modification, transport, metabolism and ubiquitination (*UBC13, MMS2, UBP7, UBI4, BRO1, TPK2, EAR1, MRP17, MFA2 and MVB12*), signalling *(MFA2)* and amino acid metabolism (*AAT2*). Deletion of *MFA2*, encoding mating factor-a, resulted in a 55% decrease in fermentation duration. *Mfa2*Δ was chosen for further investigation to understand how this gene deletion conferred fermentation efficiency in limited nitrogen conditions.

3.2 Introduction

To complete fermentation successfully (i.e. utilisation of all fermentable sugars), yeasts require sufficient Yeast Assimilable Nitrogen (YAN). The presence of sufficient YAN supports appropriate cell growth and metabolism (Bell and Henschke 2005; Ugliano et al. 2007). The rate at which a cell grows and maintains its metabolic activity can influence the regulation of other pathways (e.g. sugar metabolism), which in turn affects fermentation kinetics (Alexandre and Charpentier 1998; Bely et al. 1990; Sablayrolles et al. 1996). YAN metabolism also leads to the production of various aroma and flavour compounds, which contribute to the organoleptic properties of the wine (Vilanova et al. 2007). Therefore YAN availability is important in fermentation by significantly influencing cell growth, rate of sugar catabolism and wine flavour (Bell et al. 1979; Henschke and Jiranek 1993; Ugliano et al. 2007).

Although YAN is one of the main nutrient groups needed during fermentation, it is often not present in sufficient amounts in grape must to enable yeast to utilise all sugar. The amount and composition of YAN present in the juice can vary depending on factors such as the grape variety, viticultural management practices, soil, climate and degree of ripeness (Alexandre and Charpentier 1998; Bell and Henschke 2005; Henschke and Jiranek 1993). For example the YAN content in Australian grape juices varies between 50-350 mg L^{-1} (Ugliano et al. 2007). YAN concentrations below 150 mg L^{-1} increase the risk of stuck and sluggish fermentation as a consequence of yeast metabolism being affected (Jiranek et al. 1995a; Alexandre and Charpentier 1998; Bell and Henschke 2005). Stuck and sluggish fermentations result in wine left with residual sugar, which is not desirable in certain wine styles (Bisson 1999). Moreover, unfermented sugars can support spoilage organisms (McClellan et al. 1989) producing undesirable aromas and flavours, as well as volatile acidity (Alexandre and Charpentier 1998). The depletion of YAN in juices can also lead to the liberation of excessive H_2S in wine (Jiranek et al. 1995b; Ugliano et al. 2009).

In order to minimise problematic fermentations due to YAN insufficiency, it is common practice for winemakers to supplement fermentations with inorganic ammonium salts. These supplementations are often carried out empirically without determining the nitrogen requirement of the inoculated strain or the nitrogen content of the grape juice (Jiranek et al. 1995a; Torrea et al. 2011). Poorly considered supplementation could result in wine with increased levels of residual nitrogen that encourage microbial instability in the bottled wine, and thus reduce quality (Bell and Henschke 2005; Jiranek et al. 1995a). Also, YAN supplementation plays an important role in modulating the production of both primary metabolites and volatile compounds, which can affect

wine aroma and flavour (Torrea et al. 2011) positively or negatively if not balanced or over threshold (Ugliano et al. 2007).

An alternative paradigm to supplementation is to use yeast strains that are able to efficiently utilise the YAN available in juice in order to complete fermentation. Commercial wine yeasts have different requirements or demands for YAN (Jiranek et al. 1995a; Brice et al. 2014; Gutiérrez et al. 2012; Gutierrez et al. 2013). Yeasts with lower YAN demands are less likely to undergo nitrogen (N) starvation, enabling successful completion of fermentation in YAN-deficient juices (Gardner et al. 2002; Manginot et al. 1998). Therefore identification of genetic determinants conferring N-efficient behaviour has great merit. Previous work by this group utilising a transposon mutant library in a wine yeast background identified genes impacting N-efficiency (Gardner et al. 2005). This study builds on that work by screening a library of ORF deletants constructed in a wine yeast background.

Accordingly, the fermentation capabilities of a partial wine yeast deletion collection were analysed in high-throughput micro-fermentations under limited-N conditions and mutants grouped according to their performance. Those with the shortest fermentation were tested in laboratory-scale cultures to confirm their ability to complete N-limited fermentation quickly. The deleted genes of these mutants are of interest as they represent potential targets for strain improvement. Among the genes highlighted was *MFA2,* encoding mating pheromone a-factor. This is the first report describing the dual function of *MFA2* in mating as well as fermentation.

3.3 Material and methods

Strains and media

The parental prototrophic haploid strain AWRI1631 (*MATa*) was derived from a widely used commercial strain (N96; Borneman et al. 2008). A wine yeast deletion collection containing 1844 mutants was prepared in AWRI1631 by replacement of non-essential genes with the *KanMX* cassette (Wach et al. 1994) as described for a subset of these deletants (Varela et al. 2012). Strains were routinely grown on YPD medium (1% yeast extract, 2% bactopeptone, 2% D-glucose; Guthrie and Fink 2002) with 200 mg L^{-1} of G418 sulfate for deletant strains and with 2% agar when solid media were required for plating.

Chemically Defined Grape Juice Medium (CDGJM; McBryde et al. 2006) containing 200 g L^{-1} sugar as equimolar amounts of glucose and fructose with 75 mg L^{-1} of a mixture of amino acids and ammonium chloride (Henschke and Jiranek 1993) was used for micro-scale and laboratory-scale fermentations. To mimic red grape juice, polyphenol extract powder (Cat: Tppr,

OenoProd, Sarl) dissolved in 1.67 mL g^{-1} of 100% ethanol, was added to sterile CDGJM at the rate of 3 g L^{-1} (Walker et al. 2014).

Micro-fermentation of the wine yeast deletion collection in CDGJM

Measurement of cell growth

The wine yeast deletion collection and the wildtype strain, AWRI1631, were inoculated from -80 °C glycerol stocks (2 µL) into 96-well microtiter plates (Corning Costar®; Cat No. CLS3596) containing 200 µL of YPD and incubated statically for 48 h at 28 °C. Cells were resuspended by agitation and 2 µL of the culture were inoculated into 200 µL of CDGJM in 96-well microtiter plates and covered with clear breathable sealing film (Axygen; AXY BF-400) to allow measurement of growth as optical density at 600 nm using a spectrophotometric plate reader (Tecan M200 Infinite). All liquid handling was performed using automatic platforms fitted with 8-channel pipetting head (CAS-3800, Corbett Robotics, Australia).

Measurement of fermentation progress

Fermentation progress was measured using a sacrificial sampling approach as described in Liccioli et al. (2011b). In brief, four copies of the same plate were prepared by transferring 6 µL of overnight YPD culture into 600 µL of CDGJM in deep 96-well plates (Axygen; Cat No. P-DW-20-C) and covered with a cloth membrane (Diversified Biotech; Cat No. BEM-1). One plate of the 4 copies was collected and stored at −20 °C at each sampling point during fermentation to enable subsequent determination of residual sugar content. This approach was used to eliminate the potential influence of sampling from the small volume fermentations. Residual glucose and fructose were quantified enzymatically as described in Boehringer-Mannheim (1989) with final volumes adjusted to 200 µL for analysis in 96-well microtiter plates and reagents being purchased from Megazyme. Liquid handling during plate preparation and enzymatic analysis was performed robotically.

Evaluation of strains in laboratory scale fermentations

Flask fermentations (100 mL) in this study were conducted in CDGJM using either an automated 96-flask fermentation platform or 250 mL Erlenmeyer flasks fitted with an airlock (Walker et al. 2003). The automated fermentation platform built on a Tecan Freedom EVO consisted of four 24-position water jacketed carriers, to maintain temperature with magnetic stirrers to continuously agitate the fermentations. Each flask was comprised of a customized 100 mL Schott bottle with a fermentation lock and septum-sealed sampling port. The liquid handling arm of the Freedom EVO

collected samples (~1 mL) at regular intervals for off-line analysis. 200 µL from each sample was used to measure growth (see above) and the remaining samples were stored at -20 °C prior to the enzymatic determination of residual sugar.

Calculation of area under the curve and fermentation duration to determine fermentation performance

Fermentations were considered complete and total fermentation duration determined when residual sugar content was less than 2.0 g L^{-1}. The residual sugar values measured at each sampling point were used to plot fermentation curves for each mutant from the 100 mL fermentations. The Area Under the Curve (AUC) of each profile was then calculated using the composite trapezoid rule using GraphPad Prism 6 (GraphPad software INC., La Jolla, C.A., USA) as described by Liccioli et al. (2011a). Where the AUC values of the deletants were less than that of the wildtype, the deletants were considered to have an improved fermentation efficiency.

Statistical analysis

A two way ANOVA (Dunnett's multiple comparison test) was performed to determine the statistical significance between the fermentation performance of the individual mutants and the wildtype during fermentation. A scatter plot representing correlation between residual sugar and growth was performed using Pearson r correlation. Observed differences in the expression level of gene(s) in the wildtype and deletants were statistically tested using a two way ANOVA (Bonferroni's multiple comparisons test). All of these statistical analyses was performed using GraphPad Prism 6 (GraphPad software INC., La Jolla, C.A., USA).

Primers used in this study

The primers and corresponding sequences used in this study are shown in Table 1. Primers were sourced from Sigma Aldrich (Australia).

Confirmation of identity of individual deletants

The identity of individual deletants was authenticated by amplification of the deletion cassette using gene-specific primers (Table 1) and comparison of the DNA sequence to the reference genome of S288c using WU-BLAST2 (http://www.yeastgenome.org/blast-sgd). For deletants incorrectly labelled, the barcode region of the *KanMX* deletion cassette was amplified using primers U1 and D1 (Table 1). The tool FASTA barcodes (http://www.ttuhsc.edu/som/cbb/FASTAbarcodes/) was used to identify the query sequence to the up and down tags of the deletion library (McMahon et al. 2011).

Table 1. **Primers used in this study**.

Gene name	Forward primer sequence (5'-3')	Reverse primer sequence (5'-3')
TDA7[a]	TAATGCGATTATTTCGCTTGTAAAT	GTATGTTAAAATGCCTTCCAGATTG
UBP7[a]	GCATCCGGTAATACTAACAAGAGAA	AATAATAATGGTGGTAATGGCAATG
AIM26[a]	GCTGGTATTGACAGGTAACTATGCT	GAATCCAGTTCGTTCTCAAACTTAG
MFA2[a]	TGATAGTTTCCTTTTCCGTTAAGTG	TGGCTCAAAACTTTTTCACTTTTAC
UBI4[a]	AATAATCCTGGATAAACCAATTTCG	CTTTTCCCTTTTGGTAGTCACAATA
MKT1[a]	ATTAAGAACAAGACGAAAAATGGTG	AACTTCAATCTATCCAGTAACGGTG
MMS2[a]	CACCACTATTGCTCATTTTGTACTG	TATTTATTATTGGCTTGGACTGGAG
MRP17[a]	ATACCCACTCAAACAAACTCATTGT	CTTAGTCAGGATTGTCGTTTAGCAT
MVB12[a]	TGATTTCATGTATTTTTGGTTCAGA	GAAATTGACGATGGAGAAGAAGTAA
AAT2[a]	ATACACAATTACTCCAGTAGCTGCC	TATCCTTTATGTTCATGGGAGTTGT
BRO1[a]	GCCTTCCCTTTTCTTGATGTATATT	ACAGTCTAGCACGAAAAAGAAGAGA
TPK2[a]	TACAATTCTGGCCTTCTTACCTAAA	TAATTTTTGCACTGAGATCATGAGA
INA1[a]	CTCAGTACTCGTTTAGCTTGAATCC	TGGGCACTTACTCATACATCAAATA
EAR1[a]	TACAGGCTTTAAGAACCTTGCTCTA	TCATACGTTCTTCTTGTGACACATT
MFA1[a]	GCCCATACCTTTATTCTTTGTTCTT	AAGAAACAATGAAGCAAGATAAGGA
MFA1[c]	ATGCAACCATCTACCGCTAC	CTAAGCAATAACACATGCTGGG
MFA2[c]	GATCACCACTGCTTCCACAC	TTAAGCGATAACACAGGCGG
TAF10[d]	ATATTCCAGGATCAGGTCTTCCGTAGC	GTAGTCTTCTCATTCTGTTGATGTTGTTGTTG
ALG9[d]	CACGGATAGTGGCTTTGGTGAACAATTAC	TATGATTATCTGGCAGCAGGAAAGAACTTGGG
U1[b]	GATGTCCACGAGGTCTCT	
D1[b]		CGGTGTCGGTCTCGTAG
KanB[b]	CTGCAGCGAGGAGCCGTAAT	
KanC[b]		TGATTTTGATGACGAGCGTAAT

[a] Deletion cassette amplification.
[b] Identification of clones that were incorrectly labelled in the wine yeast library.
[a, b] Primer sequences were from *Saccharomyces* Genome Deletion Project (http://wwwsequence.stanford.edu/group/yeast_deletion_project/Deletion_primers_PCR_sizes.txt).
[c] Primers for qPCR target genes were designed using Primer3 software (http://simgene.com/Primer3).
[d] Primers for qPCR reference genes were adapted from Teste et al. (2009).

Construction of an MFA1 knock-out in AWRI1631

An *MFA1* deletion strain was constructed in the haploid wine strain AWRI1631 using a PCR based deletion strategy (Baudin et al. 1993; Wach et al. 1994). The *mfa1*Δ::*KanMX* deletion cassette was sourced from the *MFA1* deletion clone from the prototrophic BY4741 collection (Mulleder et al. 2012). The cassette was PCR amplified using VELOCITY DNA polymerase (Bioline 21098) with gene specific primers A and D (Table 1) according to the manufacturer's instructions. The identity of the PCR product was confirmed by sequencing and transformed into AWRI1631 using the lithium acetate method (Gietz and Schiestl 2007). Transformants were selected on YPD plates containing G418 sulfate (200 mg L^{-1}) and the deletions were confirmed by PCR amplification and sequencing.

Quantitative PCR for gene expression studies

To study gene expression, a qPCR experiment was conducted following the MIQE guidelines (Bustin et al. 2010; Taylor and Mrkusich 2014). Samples of the culture harvested during fermentation at similar residual sugar concentrations (approximately 128, 83, 35 and 10 g L^{-1}) were used to compare transcript abundance between strains. Cells were collected by centrifugation, and resuspended in TRIzol® Reagent (Invitrogen; 15596026) followed by snap freezing in liquid N and storage at -80 °C. Total RNA was extracted using Zymo Research kits (Direct-zol RNA MiniPrep R2050) as per the manufacturer's instructions. RNA purity and integrity were estimated from OD_{260}/OD_{280} (Tecan M200 Infinite) and gel electrophoresis. cDNA was synthesized from the total RNA (BioRad iScript kit; 170-8897) and any contaminating DNA removed with an Ambion TURBO DNAfree™ kit (AM1907). Relative quantification of the transcripts was performed on a Biorad CFX-96 Real Time PCR system with Ssofast™ Evagreen Supermix (BioRad; 172-5203) with primers as listed in Table 1. The amplification cycle included an initial denaturation at 95 °C for 30 sec followed by 40 cycles at 95 °C for 5 sec and 60 °C for 5 sec. A sample maximisation strategy was used with all six biological replicates being amplified in duplicate. At the end of each run a melting curve was prepared for all samples from 65 to 95 °C. Transcript abundance of the target genes was normalized with abundance of reference genes (*TAF10*, *ALG9*; Teste et al. 2009) in the same sample. The stability of the housekeeping genes was determined using qbase+ software (Vandesompele et al. 2002) and primer efficiency was determined by running a standard curve using a serially diluted cDNA sample. The mean fold-change of expression for given genes per sample for different time points was determined using a relative quantification method (Schmittgen and Livak 2008) using the qbase+ software (Vandesompele et al. 2002), Excel (Microsoft Office 2013) and GraphPad Prism (GraphPad Prism 6 – GraphPad software INC., La Jolla, C.A., USA).

3.4 Results

Construction of a wine yeast deletion library

To ensure the most industrially relevant genetic background was used in this study, a wine yeast deletion library was constructed in the haploid wine yeast derivative AWRI1631 (Borneman et al. 2008). Using the approach reported previously (Varela et al. 2012) a total of 1844 mutants were constructed (Appendix 3, Pg 163). All the deletants were checked by PCR amplification and sequencing of the deletion cassette.

High throughput screening (micro-fermentation) of the wine yeast deletion collection

In order to identify genes that influence fermentation duration when only supplied with minimal N (75 mg L^{-1}), the sugar utilisation profile of clones from this wine yeast deletion collection was compared to that of the wildtype strain, AWRI1631, in a high throughput micro-fermentation screening in CDGJM (Fig. 1).

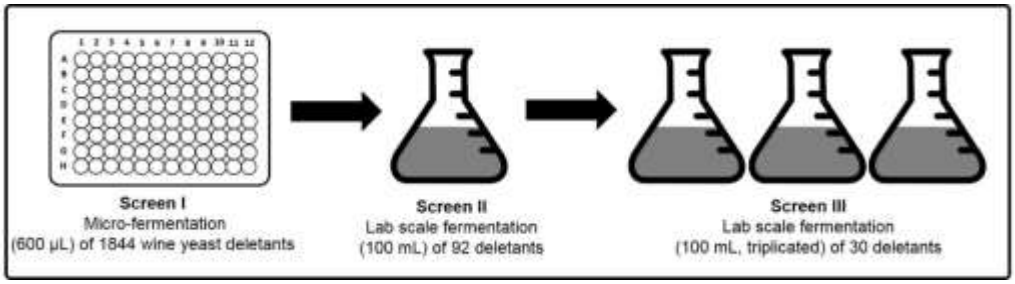


Figure 1. Schematic representation of the screening of the wine yeast deletion library for fermentation performance in a chemically defined grape juice medium with limited nitrogen (75 mg N L^{-1}).

To ensure supplied nitrogen would protract fermentation preliminary experiments were also undertaken with the addition of sufficient N (450 mg L^{-1}), the wildtype strain was able to utlise all available sugar in ~60 h in comparison to ~200 h when only minimal N is available (data not shown). Additional fermentation wells containing the wildtype were sampled at a higher frequency to accurately determine the most appropriate sampling points (A-D) for the deletants (Fig. 2A). Initially the wildtype consumed sugars slowly (43 g L^{-1} by 96 h), however fermentation became more vigorous after 96 h. Using this information, residual sugars were measured for the 1844 deletants at time points B (121 h) and C (146 h). The extent of sugar catabolism by the wine yeast deletants was highly variable (Fig. 2B), when the concentration of residual sugars for the wildtype was 42 ± 8 g L^{-1} (time point C). Given this range the deletants were classified into three groups: 1040 with residual sugar around that of the wildtype (30 - 60 g L^{-1}), 282 with more residual sugar

(> 60 g L^{-1}) than the wildtype and 522 with markedly less residual sugar (< 30 g L^{-1}) than the wildtype group (Appendix 7, Pg 189). Apart from the sugar utilisation profile, growth was monitored for the wildtype and the deletants during the early stages of micro-fermentation (Fig. 2A and Appendix 7, Pg 189). The wildtype reached stationary phase at 113 h with an optical density of 1.77. Therefore, using optical density at 113 h and residual sugars at 146 h (time point C) a correlation was plotted to identify whether the fermentation abilities of the deletants were dependent on growth (Fig. 3). A weak negative correlation was observed, emphasizing a small effect of growth on fermentation progression (i.e. increase in growth of the deletants leading to a decrease in residual sugar). Further analysis of the 522 deletants that completed fermentation in a shorter time than the wildtype, identified that the majority (408 i.e. 78%) of the deletants had higher optical density than the wildtype.

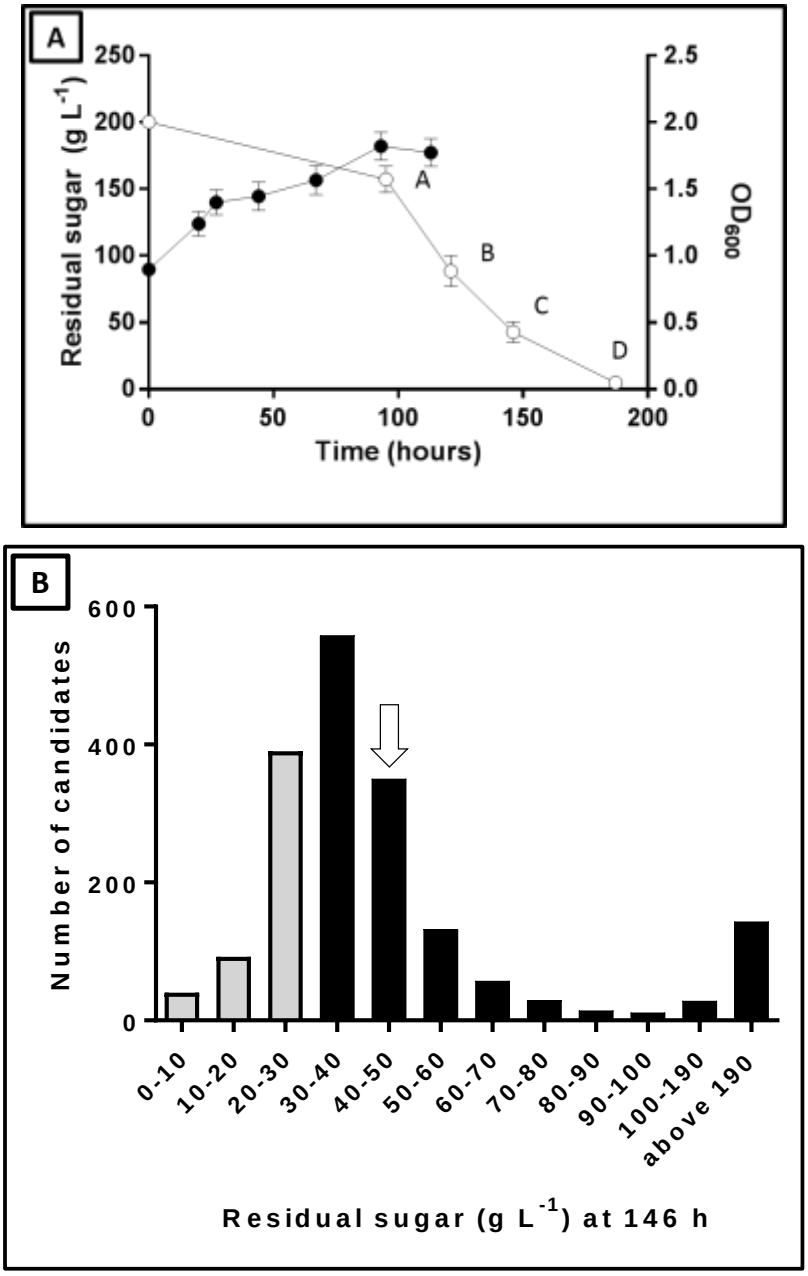


Figure 2. (A) Fermentation performance of AWRI1631 during micro-fermentation. Sugar utilisation (open symbols) at four time points: A (95 h), B (121 h), C (146 h) and D (187 h). Growth as estimated by optical density at 600 nm (solid symbols) Sixteen replicates were analysed. **(B)** Histogram representing the distribution of deletion mutants (number) based on the residual sugar content at time point C (146 h). The arrow indicates the residual sugar concentration range of the wildtype, AWRI1631 (42 ± 8 g L^{-1}) at time point C. Candidates for further analysis were chosen from the groups with grey shaded bars.

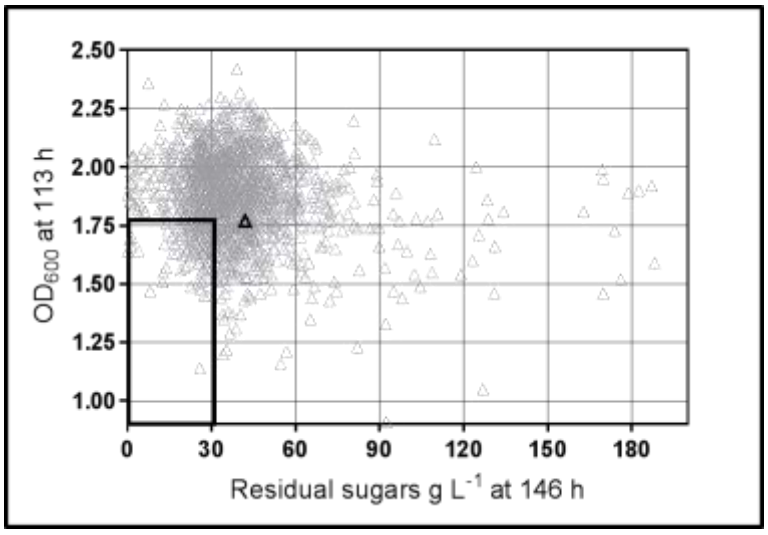


Figure 3. Scatter plot of the residual sugar (at time point C, 146 h) and growth (OD_{600} at 113 h) of the deletion mutants (grey) and the wildtype (black) during micro-fermentation. Deletants (114) exhibiting shorter fermentation duration and decreased growth in comparison to the wildtype are highlighted in a bold box. Correlation coefficient (r) = -0.1616.

Based on the results of this screening exercise, 92 candidates showing the fastest fermentation and no growth defects were chosen for further evaluation (Appendix 8, Pg 190). These candidates were selected as they were observed to utilise significantly more sugar than the wildtype, having less than 48 and 26 g L^{-1} of residual sugar at time points B and C, respectively – i.e. approximately half of that of the wildtype (88 and 42 g L^{-1} of residual sugar at time point B and C, respectively). Of the possible 522 candidates, an arbitrary total of 92 of the fastest deletants was chosen since this number (plus controls) could be accommodated in the 96-position fermentation platform.

Confirmation of deletant fermentation performance in laboratory scale fermentations

The fermentation performance of the 92 shortlisted deletants was confirmed in laboratory-scale (100 mL) fermentations (screen II) since this format allowed greater control of experimental conditions and better representation of an anaerobic, wine-like fermentation (Walker et al. 2014). Results of this experiment highlighted 48 deletants that completed fermentation in less time than the wildtype (Fig. 4A), with 30 utilising all sugar within 131 to 205 h compared to 229 h for the wildtype. As well as total fermentation time, the Area Under the Curve (AUC) of fermentation curves of individual deletants was also used for a more holistic view of the pattern of sugar utilisation by which deletants were ranked (Liccioli et al. 2011a). AUC values calculated for the 30 strains were 7185 to 9516 (i.e. 72-95 % of the wildtype at 9999; Appendix 9, Pg 191). These 30 candidates were further assessed in a third screen conducted in triplicate (Fig. 4B). Fifteen of these deletants

utilised all sugars in significantly less time than the wildtype (Table 2). *Tda7*Δ and *aim26*Δ were the most rapid deletants, completing fermentation in 121 h, which was 172 h ahead of the wildtype (293 h). Closely following were *ubp7Δ* and then *mfa2Δ* (Table 2). The remaining eleven deletants exhibited fermentation durations ranging from 63 to 85% of the wildtype. The AUC for individual deletants representing sugar utilisation over time was calculated as being 54–85% of AWRI1631, with *tda7*Δ (AUC = 8911) being the most efficient and *ear1*Δ (AUC = 14073) being the least efficient compared to the wildtype (AUC = 16399; Table 2).

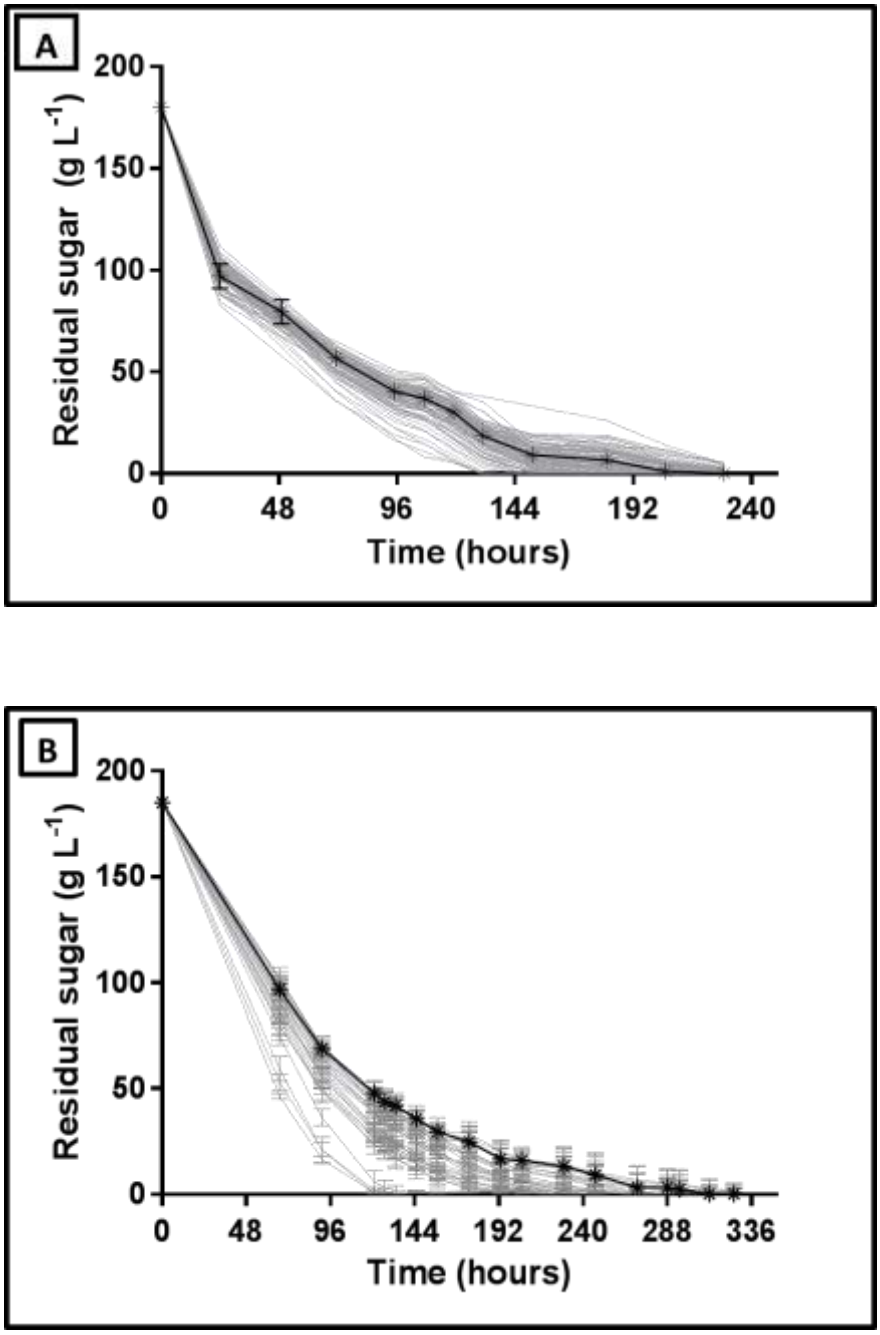


Figure 4. Sugar utilisation of the wildtype (AWRI1631, black line) compared to the shortlisted 92 deletants (grey lines) over time. Fermentation was conducted in 100 mL of CDGJM with 75 mg N L^{-1} at 28 °C on a robotic sampling platform. **(A)** Screen II of the shortlisted 92 yeast deletants (single cultures) compared with the wildtype (4 replicates). **(B)** Screen III of the selected 30 candidates in triplicate, along with the wildtype strain (6 replicates). Standard deviation of the mean is represented as error bars

Table 2. Fermentation performance of fermentation efficient deletants.

Deleted gene	Gene function	FD (h) (FD ± SD)	FD % of wildtype	AUC (AUC ± SD)	AUC % of wildtype (AUC % ± SD)
TDA7[a]	Topoisomerase I Damage Affected	121 ± 0	41 ± 0	8911 ± 114	54 ± 0
UBP7[a]	UBiquitin-specific Protease	123 ± 3	42 ± 1	9332 ± 275	57 ± 1
AIM26[a]	Altered Inheritance rate of Mitochondria	121 ± 0	41 ± 0	9602 ± 482	58 ± 2
MFA2[a]	Mating Factor A	131 ± 12	45 ± 4	10825 ± 431	66 ± 2
UBC13[a]	Ubiquitin-conjugating	185 ± 17	63 ± 6	12205 ± 645	74 ± 3
UBI4[a]	Ubiquitin	193 ± 0	66 ± 0	12225 ± 306	74 ± 1
MMS2[b]	Methyl MethaneSulfonate sensitivity	209 ± 18	71 ± 6	12475 ± 720	76 ± 4
MRP17[a]	Mitochondrial Ribosomal Protein	201 ± 7	69 ±2	12643 ± 85	77 ± 1
MKT1[a]	Maintenance of K2 Killer Toxin	191 ± 15	65 ± 5	12712 ± 360	77 ± 2
MVB12[a]	MultiVesicular Body sorting factor of 12 kilodaltons	193 ± 0	66 ± 0	13239 ± 211	81 ± 1
AAT2[b]	Aspartate AminoTransferase	215 ± 28	73 ± 10	13273 ± 986	81 ± 6
BRO1[b]	BCK1-like Resistance to Osmotic shock	227 ± 21	78 ± 7	13387 ± 699	81 ± 4
INA1[c]	INdicator of Abscission	225 ± 48	77 ± 16	13567 ± 1375	82 ± 8
TPK2[a]	Takashi's Protein Kinase	201 ± 7	69 ± 2	13593 ± 184	83 ± 1
EAR1[d]	Endosomal Adaptor of Rsp5p	249 ± 38	85 ±13	14073 ± 269	85 ± 6
Wildtype		293 ± 21	100	16399 ± 752	100

Fermentation performance was calculated as AUC (Area Under the Curve) and FD (Fermentation Duration) of the 15 shortlisted gene deletants (from Screen III) and percentage difference in AUC and FD of the deletants in comparison to the wildtype, AWRI1631 (i.e. AUC % = (mutant AUC/parent AUC)*100 and FD % = (deletant FD/wildtype FD)*100). Fermentation duration corresponds to the time (h) by which residual sugar was < 2 g L^{-1}. Values represent the average of FD/AUC ± SD. Deletants significantly different in fermentation completion when compared to the wildtype are represented by [a], $p < 0.0001$; [b], $p < 0.001$; [c], $p < 0.01$, [d], $p < 0.1$ (two-way ANOVA).

Characterisation of the deletants mfa1Δ and mfa2Δ

To date, *MFA2* has only been annotated to mating and cell-type regulation (Galgoczy et al. 2004; Johnson 1995; Michaelis and Herskowitz 1988). Our results of improved fermentation performance under N-limited conditions for *mfa2*Δ alludes to a dual function of this gene. In order to explore the link between efficient fermentation and the yeast mating factor, the function of the two genes encoding mating a-factor, *MFA2* and *MFA1*, were further studied. The sugar utilisation and growth profile of *mfa1*Δ was similar to the wildtype (AWRI1631), whilst growth and fermentation duration of *mfa2*Δ were reduced (Fig. 5).

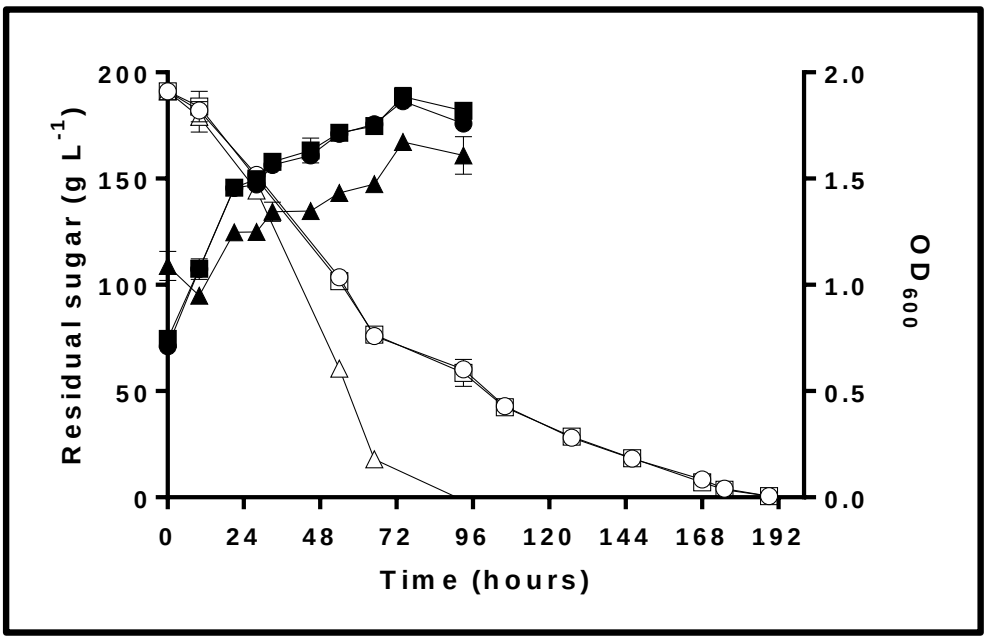
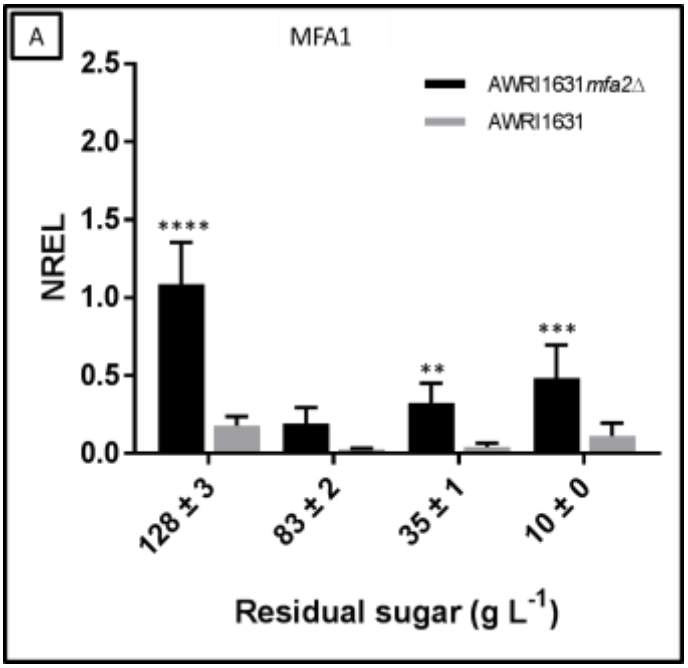


Figure 5. Fermentation performance of *mfa1*Δ, *mfa2*Δ and the wildtype AWRI1631. Fermentations (100 mL) were conducted in triplicate in CDGJM with 75 mg N L^{-1}. Data points represent the average value ± standard deviation. Sugar utilisation over time of the individuals (open symbols). Growth as estimated by optical density at 600 nm of the individuals (solid symbols). Circle; AWRI1631, square; AWRI1631 *mfa1*Δ and triangle; AWRI1631 *mfa2*Δ.

The expression of *MFA1* and *MFA2* during fermentation was also examined. RNA was extracted from cultures of mutant (AWRI1631 *mfa2*Δ) and parental (AWRI1631) strains when the sugar content was approximately 128, 83, 35 and 10 g L^{-1} in each culture. Differential expression of *MFA1* and *MFA2* was observed in the wildtype, with *MFA2* being expressed to a greater extent (~1.93 fold NREL) compared to *MFA1* (~0.17 fold NREL) at the first time point (Fig. 6A and B). The expression of both genes markedly declined at 83 and 35 g L^{-1} of residual sugar (corresponding to 58.5% and 82.5% sugar consumption, respectively). In the case of *MFA2*, expression recovered in the wildtype in the final sample (95% of sugar consumed; Fig. 6B). The

absence of *MFA2* transcript in the AWRI1631 *mfa2*Δ strain confirmed the deletion of the *MFA2* gene (Fig. 6B). Interestingly, expression of *MFA1* was upregulated by ~6- to 7-fold in the *MFA2* deletant at the initial sampling point (128 g L^{-1}). Although *MFA1* expression declined subsequently, it remained ~4-fold higher than in the wildtype (Fig. 6A).



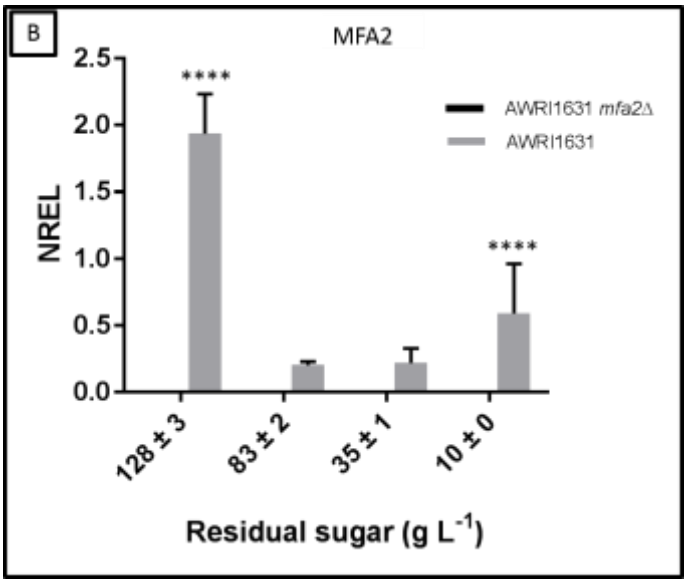


Figure 6. Expression of *MFA1* **(A)** and *MFA2* **(B)** in AWRI1631 and AWRI1631 *mfa2*Δ strains. Normalized relative expression level (NREL) is shown at four selected residual sugar levels (g L^{-1}). Two-way ANOVA was used to determine the significant differences in expression levels between *mfa2*Δ and the parent. Significant difference is indicated as **, p <0.01; ***, p <0.001; ****, p <0.0001.

3.5 Discussion

Yeasts differ in fermentative capabilities in N deficient must, which is dependent upon their demand for nitrogen (N) to maintain glycolytic flux – the genetic basis of which is the focus of recent research (Brice et al. 2014; Brice et al. 2013; Tesnière et al. 2015). In order to generate N-efficient strains it is important to identify genes and processes that allow the yeast to perform well in low N juices. Gene deletions provide a paradigm to better understand the mechanisms behind the improved fermentation phenotype exhibited by these strains. Although there are several strategies that are now available for strain improvement, whole genome investigations using collections of yeast mutants with single defined gene deletions (Giaever et al. 2002; Winzeler et al. 1999) provide opportunities to readily study gene functionality, and so identify targets for strain improvement (Donalies et al. 2008). Some studies have successfully used deletion collections in auxotrophic laboratory yeast backgrounds to investigate growth phenotypes in response to exposure to single stress factors associated with fermentation. Examples include the identification of genes essential for tolerance to ethanol and other alcohols (Fujita et al. 2006; Teixeira et al. 2009; van Voorst et al. 2006), high pressure and low temperature (Abe and Minegishi 2008), acetic acid (Mira et al. 2010), oxidative and chemical stress (Tucker and Fields 2004), high glucose (Teixeira et al. 2010), anaerobic growth (Reiner et al. 2006) and low temperature (Salvadó et al. 2016). Most recently this approach has been used by this group to define the Fermentome, genes essential to allow the successful completion of fermentation under the multi-stress conditions of a high sugar, juice-like medium (Walker et al. 2014). Alternatively, genes important to the response of yeast to stress have been identified through transcriptional analyses following exposure to stresses such as N limitation (Backhus et al. 2001; Brice et al. 2013; Contreras et al. 2012; Mendes-Ferreira et al. 2007a; Mendes-Ferreira et al. 2007b; Rossignol et al. 2003). But research in a wine yeast background to identify genes related to N-efficiency in wine-like fermentations has been limited to the screening of a random collection of transposon mutants of non-essential genes (Gardner et al. 2005) or a few deletion strains (Zhang 2014). The present study sought to fill this knowledge gap.

The need to supply sufficient N (both in amount and specific amino acid composition) to meet the auxotrophic requirements of laboratory strains used in previous studies, has meant that investigations related to N efficiency were limited to high N content (Walker et al. 2014). Several studies have shown that supplementation can affect metabolism through the blockage of pathways, or by combinatorially influencing metabolic networks, thereby making quantitative comparisons of growth and physiological studies difficult (Mulleder et al. 2012; Pronk 2002). The recent availability of prototrophic libraries in laboratory yeast (Mulleder et al. 2012) and wine yeast

(Varela et al. 2012) has made it possible to conduct studies under limited-N conditions, overcoming previous shortcomings.

In this study, a prototrophic wine yeast deletion library (Varela et al. 2012) was used to identify genes influencing fermentation in a wine-like limited N medium. Based on the sugar utilisation profile of the wildtype, preliminary screening via micro-fermentations (Appendix 3, Pg 163) of the wine yeast deletion collection allowed mutants to be segregated into groups based on the extent of sugar utilisation. Fermentation by 282 of the mutants (15%, Fig. 2B, (Appendix 7, Pg 189) was protracted indicating that these genes were essential for the timely completion of fermentation. Walker et al. (2014) used the deletion library in the auxotrophic laboratory strain BY4743 to identify 93 genes (i.e. the fermentome) essential for fermentation in CDGJM under high N (450 mg N L^{-1}) and high sugar (200 g L^{-1}) conditions. Interestingly, despite differences in the experimental conditions of these studies (i.e. N availability and strain background) our list of 282 protracted deletants included 15 of the fermentome genes (Table 3) identified by Walker et al. (2014), underscoring the universal importance of these. A further 14 deletants of fermentome genes, however, proved non-essential in the present study (i.e. in the AWRI1631 background), since they were not protracted compared to the wildtype. Further work to explore the influence of strain background and growth conditions will helped resolve such apparent differences. More importantly, the wine yeast deletion library needs to be expanded to a complete collection from the current 1844 deletants or at least the remaining 64 fermentation essential genes identified by Walker et al. (2014) in order to assess their essentiality in the conditions of the present study.

Table 3. List of genes essential in timely completion of fermentation.

ORF	Gene name	Gene function description
YEL051W	*VMA8*	Subunit D of the V1 peripheral membrane domain of V-ATPase
YHL020C	*OPI1*	Transcriptional regulator of a variety of genes
YKR007W	*MEH1*	Component of the EGO and GSE complexes
YFR053C	*HXK1*	Hexokinase isoenzyme 1
YDR247W	*VHS1*	Cytoplasmic serine/threonine protein kinase
YGR063C	*SPT4*	Spt4p/5p (DSIF) transcription elongation factor complex subunit
YJR033C	*RAV1*	Subunit of RAVE complex (Rav1p, Rav2p, Skp1p)
YLL007C	*LMO1*	Homolog of mammalian ELMO (Engulfment and celL MOtility)
YMR263W	*SAP30*	Component of Rpd3L histone deacetylase complex
YNL076W	*MKS1*	Pleiotropic negative transcriptional regulator
YOR209C	*NPT1*	Nicotinate phosphoribosyltransferase
YOR221C	*MCT1*	Predicted malonyl-CoA:ACP transferase
YOR265W	*RBL2*	Protein involved in microtubule morphogenesis
YPR036W	*VMA13*	Vacuolar Membrane Atpase
YPR074C	*TKL1*	TransKetoLase

ORF; Open Reading Frame.

Twenty eight percent of the wine yeast deletion library mutants (522 deletants) completed fermentation in a shorter time, alluding to the functional genes negatively influencing fermentation progress. Whether these genes are directly related to nitrogen metabolism or instead are general regulators of fermentation is worthy of future study. Of these,114 deletants were capable of enabling shorter fermentation time in spite of exhibiting decreased growth. In general fermentation rate has been reported to correlate with biomass (Varela et al. 2004), further evaluation of this group of genes may reveal exceptions. However these 522 genes are potential targets for guided strain improvement and thus were assessed in greater detail. A shortlist of the best performing 92 strains (< 48 and < 26 g L^{-1} of sugar at time point B and C, respectively – i.e. approx. 50% of that of the wildtype) were chosen for further evaluation in 100 mL fermentations. Fifteen strains completed fermentation in between 41 and 69% of the time taken by the parent (Table 2). Gene Ontology (GO) analysis (Appendix 10, Pg 192) revealed that 11 out of these 15 genes were over-

represented for the GO terms related to different stages of ubiquitination and protein modification/turnover or metabolic processes: protein polyubiquitination (*UBI4, UBC13* and *MMS2*), protein deubiquitination (*UBP7, UBI4* and *BRO1*), protein modification by small protein conjugation (*UBP7, UBI4, BRO1, MMS2* and *UBC13*), post-translational protein modification (*UBP7, TPK2, UBI4, BRO1, MMS2* and *UBC13*) protein metabolic process (*UBP7, TPK2, UBI4, BRO1, MFA2, MMS2, MKT1, EAR1, UBC13* and *MRP17*) and endosomal transport (*MVB12, EAR1* and *BRO1*). The remaining four genes include *AAT2* (involved in aspartate aminotransferase in nitrogen metabolism) and three with unknown function, *INA1, TDA7* and *AIM26*.

Ubiquitination is a protein degradation process that is required in many cellular processes such as the cell cycle, endocytosis and stress response (Hershko 1997; Staub and Rotin 2006). In a study of the stress response of yeast under sake brewing conditions, 235 genes related to stress response or ethanol fermentation were deleted and investigated for their impact on ethanol production (Wu et al. 2009). Amongst the 235 genes were *UBI4, UBP7, UBC13* and *TPK2,* which have also been identified in our study. Wu and co-workers (2009) demonstrated that deletion of ubiquitin related genes such as *UBI4* and *UBC13,* increased fermentation abilities producing significantly more ethanol than the parental strain. Furthermore, enhanced fermentation abilities of *ubi4*Δ were confirmed in a number of laboratory yeast strain backgrounds (Wu et al. 2009).

An important group of proteins regulated by ubiquitination are plasma membrane proteins, in particular, amino acid permeases. Ubiquitination of these initiates endocytosis and the eventual degradation of the ubiquitin bound protein in the vacuole/lysosome via the multivesicular body (MVB) pathway (Hicke 2001). Genes such as *BRO1* and *EAR1* (in combination with *SSH4*) play a role in the regulation of Gap1p (general amino acid permease) degradation by ubiquitination in the presence of ammonium (Leon et al. 2008; Nikko et al. 2003). However, deletion of *BRO1* (Nikko et al. 2003), *MVB12* (Oestreich et al. 2007) or *EAR1* (in combination with *ssh4*Δ; Leon et al. 2008) have been shown to disrupt this pathway thereby interfering with the degradation process. Interestingly, *ear1*Δ (in combination with *ssh4*Δ) results in the localisation of Gap1p to the vacuolar membrane rather than the vacuolar lumen, where it would otherwise be degraded (Leon et al. 2008) and *bro1*Δ results in the recycling of Gap1p to the cell membrane without ubiquitination in the presence of ammonium (Nikko et al. 2003), essentially desensitising *GAP1* to nitrogen catabolite repression at the protein level. It is possible to consider that the lack of regulation of amino acid permeases by the MVB pathway may play a role in successful low N fermentation. However, it is not known how the gene deletions in this study affect the degradation of other amino

acid permeases or amino acid catabolic enzymes, which could also play a role in the observed enhanced fermentation performance.

MFA2 was further investigated to understand how deletion of this mating gene positively affected fermentation. To date *MFA2* has only been annotated to mating and cell-type regulation (Galgoczy et al. 2004; Johnson 1995; Michaelis and Herskowitz 1988), *MFA2*, together with *MFA1*, considered functionally redundant, are responsible for the production of a signalling molecule (a-factor) in a *MATa* cell (Michaelis and Herskowitz 1988). Both *MFA1* and *MFA2* produce a precursor (36 and 38 amino acids, respectively), which undergoes several modification steps involving different genes before the mature a-factor molecule is transported outside the cell through the ABC transporter *STE6* (review by Michaelis and Barrowman (2012)). We hypothesized that mating pheromone production and processing is an energy consuming process. Therefore in a haploid heterothallic strain, where no mating or switching of mating types occurs, the ability to down-regulate synthesis/processing of mating factor-a, may lead to a metabolic efficiency that benefits fermentation. This finding is in keeping with the finding that deletants of *MFA2* are haploproficient in either carbon- or nitrogen-limited media (Delnieri et al. 2007). Given that deletion of *MFA2* resulted in a significant increase (34%) in sugar catabolism compared to the parent, we chose to also examine *MFA1*, a functionally redundant gene encoding a-factor. As the *mfa1*Δ deletant was absent in the deletion collection used in this work, the *MFA1* deletant (*mfa1*Δ::*KanMX*) was constructed in the same background as *mfa2*Δ, AWRI1631, to determine whether an *mfa1*Δ exhibited a similar fermentation phenotype. In fact, *mfa1*Δ deletant performed no differently to the wildtype in terms of fermentation and growth (Fig. 5), suggesting potentially different roles for the *MFA1* and *MFA2* gene products.

In the wildtype background, transcription of *MFA2* was dominant to that of *MFA1* (Fig. 6A and B). However, when *MFA2* was deleted, *MFA1* produced a pattern of expression through fermentation that implied a compensation for the *MFA2* gene product in *mfa2*Δ. Contrasting with these results, others have shown *MFA1* and *MFA2* to be transcribed at similar levels and to be functionally equivalent. Thus deletion of one of the mating factor genes did not prevent the strain being mating proficient (Chen et al. 1997; Michaelis and Herskowitz 1988). However, here we show that these genes are not functionally equivalent, at least in terms of their impact on fermentation performance. Further work is needed to determine the basis for the link between these genes and fermentation, the extent to which they are functionally equivalent in mating type functions and interactions with related genes, and the basis for their differential expression even in the wildtype.

Novel interactions between genes have been identified when unexpected phenotypes result from mutations in two or more genes (Costanzo et al. 2010; Dixon et al. 2009). Nevertheless, gene interaction networks (adapted from Costanzo et al. 2016 and the Saccharomyces Genome Database), already indicate that *MFA1* and *MFA2* genes interact with different sets of genes, including genes involved in either carbohydrate metabolism, transport or storage (Table 4). These genes will be examined for their potential role in fermentation speed in a *mfa2*Δ strain.

Table 4. List of genes interacting with *MFA2* involved in carbohydrate metabolism/ transport or storage.

Type of interaction	Gene	Gene function
Negative	*GAL10*	GALactose metabolism
Negative	*GID7*	Glucose Induced Degradation deficient
Negative	*HXT5*	HeXose Transporter
Negative	*STL1*	Sugar Transporter-Like protein
Negative	*PCL6*	Pho85 CycLin

Adapted from Costanzo et al. (2016).

3.6 Conclusion

Nitrogen efficient strains offer a means for avoiding or reducing the problems associated with the fermentation of grape juices low in N, but the basis for these efficiency differences is not known. Motivated by this and recognising the fact that wine and laboratory yeast strains can behave differently under wine-like conditions, we generated and exploited a partial wine yeast deletion collection to identify genes whose deletion improved fermentation performance in low N media. Fifteen deletants were identified through a robust 3-stage screening process. The unexpected link between one of these gene deletions, *mfa2*Δ, and fermentation remains to be explored at a more fundamental level. Further candidates would likely be found with completion of the library with all non-essential genes, with all showing promise as the basis for construction of optimised strains for industry use, perhaps by genome editing (Bao et al. 2014). Their use would avoid the need for YAN supplementation or at least reduce the incidence of problem fermentations in unsupplemented juices.

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CHAPTER 4

Investigation of the effect of an *MFA2* deletion on fermentation duration

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Principal Author

Name of Principal Author (Candidate)	Josephine Jasmine Peter
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Overall percentage (%)	80
Certification:	This paper reports on original research I conducted during the period of my Higher Degree by Research candidature and is not subject to any obligations or contractual agreements with a third party that would constrain its inclusion in this thesis. I am the primary author of this paper.
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Co-Author Contributions

By signing the Statement of Authorship, each author certifies that:

i. the candidate's stated contribution to the publication is accurate (as detailed above);
ii. permission is granted for the candidate to include the publication in the thesis; and
iii. the sum of all co-author contributions is equal to 100% less the candidate's stated contribution.

Name of Co-Author	Tommaso L Watson
Contribution to the Paper	Oversaw the experimental design, supervised the research and revised the manuscript
Signature	Date 21/8/2017

Name of Co-Author	Michelle E. Walker
Contribution to the Paper	Oversaw the experimental design, supervised the research and revised the manuscript
Signature	Date 16/8/2017

Name of Co-Author	Jennie M. Gardner		
Contribution to the Paper	Oversaw the experimental design, supervised the research and revised the manuscript		
Signature		Date	16-8-17

Name of Co-Author	Vladimir Jiranek		
Contribution to the Paper	Oversaw the experimental design, supervised the research and revised the manuscript		
Signature		Date	16/8/17

Investigation of the effect of an *MFA2* deletion on fermentation duration

Josephine J. Peter, Tommaso L. Watson, Michelle E. Walker, Jennie M. Gardner and Vladimir Jiranek*

Department of Wine and Food science, The University of Adelaide, PMB 1 Glen Osmond, SA 5064, Australia and Wine Innovation Cluster, Adelaide, South Australia, Australia

***Corresponding author:**

Vladimir Jiranek

School of Agriculture, Food and Wine

The University of Adelaide

Urrbrae, SA 5064

Australia

Tel.: +61 8 313 5561

Fax: +61 8 313 7415

Email: vladimir.jiranek@adelaide.edu.au

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4.1 Abstract

Nitrogen insufficiency during oenological fermentation can lead to problems such as stuck and sluggish fermentation. Although supplementation can alleviate these problems, an alternative option is to conduct fermentation with yeast strains that utilize nitrogen efficiently thereby ensuing fermentation completion. We previously reported that deletion of *MFA2* (mating a-factor) in AWRI1631, a derivative of the wine related strain, N96, resulted in a 34% reduction of fermentation duration. Since *MFA2* has not previously been reported to impact fermentation, we sought to investigate *MFA2* further in this context, and to determine whether the effect of *MFA2* gene deletion was dependent on the mating type, genotype, and gene dosage. We found that the shortened fermentation by the *MFA2* deletion was not only specific to the N96 strain background but also specific to *MATa* cells. Shorter fermentation was also observed in diploids of N96 when *mfa2*Δ was sourced from the AWRI1631 *mfa2*Δ (*MATa*) strain. Further, these *MFA2* deletants also showed reduced growth, which could be due to increased protein turnover and the strain increasing glycolytic flux by driving more energy into protein synthesis rather than biomass formation.

4.2 Introduction

Traditional winemaking relies on the microflora present on grapes and winery equipment for the fermentation of grape juice to wine, whereas modern winemaking often uses commercially cultured strains (Pretorius 2000). Commercial strains with well-defined technological properties are a valuable tool to help winemakers manage wine styles, limit fermentation problems and contribute to quality (Pretorius 2000; Schuller and casal 2005). One of the expected qualities of such strains is an ability to ferment juices to "dryness" promptly. For this reason, commercially available starter cultures are usually robust fermenters able to withstand harsh winemaking conditions such as high alcohol concentrations and depletion of nutrients (Bradbury et al. 2006).

Yeast assimilable sources of nitrogen are often low in grape juices, which can be a cause of protracted fermentations (Bisson 1999) and the production of off aromas (Jiranek et al. 1995b). It is therefore commonplace to supplement juice/must with inorganic sources of nitrogen (commonly diammonium phosphate; DAP) (Jiranek et al. 1995a). However as nitrogen concentration and composition in grapes is known to vary significantly depending on environmental factors, vineyard practices and grape variety (Alexandre and Charpentier 1998, Bell and Henschke 2005), supplementation may prove to be insufficient or excessive. Overuse of DAP can lead to overproduction of some compounds (e.g. acetate esters, ethyl acetate), which negatively influence wine aroma and flavour (Ugliano et al. 2007). In some cases, residual nitrogen can encourage microbial instability and reduce the quality of the wine (Bell and Henschke 2005). Thus the nitrogen concentration in grape juice and must influences both the kinetics of the fermentation as well as aroma and flavor compound formation (Bell and Henschke 2005; Jiranek et al. 1991).

There is a wide variability between wine yeast strains in their nitrogen requirement (Jiranek et al. 1995a; Brice et al. 2014; Crepin et al. 2012; Gutiérrez et al. 2013a; Julien et al. 2000). For instance, some strains require more nitrogen to maintain high viability and metabolic activity (Brice et al. 2013). Therefore, the use of yeast 'nitrogen efficient' strains represents an innovative way to reduce the incidence of fermentation problems associated with nitrogen deficient juices (Jiranek et al. 1995a; Gardner et al. 2002), without resorting to supplementation, which can have the limitations detailed above. Although research in oenological microbiology has identified a few genes influencing nitrogen efficiency (Gardner et al. 2005; Zhang 2014), there are likely other genes and mechanisms to uncover.

Previously we identified genes influencing fermentation performance in low nitrogen conditions (Peter et al. 2017). Upon deletion, these genes give rise to improved fermentation performance, thereby making them possible targets for strain improvement (Astorga et al. 2007,

Donalies et al. 2008), potentially using genome editing techniques, should strains produced in this way be acceptable for use in the wine industry (Bao et al. 2014). Among the shortlisted mutants, *mfa2*Δ catabolised all sugar in about 2/3rd of the time taken by the wildtype. *MFA2* encodes the mating a-factor pheromone precursor and has not previously been linked to fermentation kinetics. We therefore sought to further characterise the effect of *mfa2*Δ on fermentation duration.

Most wine strains are diploid (Pretorius 2000). Since the deletant was originally highlighted in the haploid AWRI1631 background, the role of ploidy and gene dosage was therefore investigated using diploid heterozygous and homozygous *MFA2* deletion strains. Comparisons were made for the fermentation performance of haploid strains derived from N96 (AWRI1633 *MATα*, AWRI1631 *MATa*) and L2056 (C911A MAT*α*, C9 11D *MATa*).

4.3 Materials and methods

Strains, media and culture conditions

The strains used in this study are listed in Table 1. Strains C911A and C911D are genetically related but non-identical haploid derivatives (Walker et al. 2003) of commercial strain L2056 (Lallemand, Australia). Strains AWRI1631 and AWRI1633 are haploid derivatives of commercial strain N96 (Anchor Yeast, South Africa). AWRI1633 was constructed using AWRI1631 (*MATa*; lacking HO gene) by introducing a plasmid bourne copy of the HO gene, driven by the GAL4 promoter, which induced switching of mating type from *MATa* to *MATα*. The plasmid in the resulting AWRI1633 was cured on 5-FOA plates. All strains were maintained on Yeast Peptone Dextrose (YPD) medium (1% yeast extract, 2% bactopeptone, 2% D-glucose). G418 sulfate (200 mg L^{-1}) was added for antibiotic selection. Fermentations were conducted in Chemically Defined Grape Juice Medium (CDGJM, McBryde et al. 2006) containing 200 g L^{-1} sugar with low nitrogen concentration (75 mg N L^{-1} as a mix of amino acids and ammonium chloride; Henschke and Jiranek 1993) with 3 g L^{-1} of polyphenol extract to mimic red grape juice (Walker et al. 2014).

Table 1. Strains used in this study.

Strains	Genotype	Source
L2056	*MATa*/*α*	Lallemand Pty Ltd, Australia
L2056 *MFA2 mfa2*Δ	*MATa*/*α*, *MFA2*/*mfa2*Δ::*KANMX4*	This study
L2056 *mfa2*Δ *mfa2*Δ	*MATa*/*α*, *mfa2*Δ::*KANMX4*/*mfa2*Δ::*KANMX4*	This study
C911A	L2056 *ho*Δ *MATα*	Walker et al. (2003)
C911D	L2056 *ho*Δ *MATa*	Walker et al. (2003)
C911A *mfa2*Δ	*MATα*, *mfa2*Δ::*KANMX4*	This study
C911D *mfa2*Δ	*MATa*, *mfa2*Δ::*KANMX4*	This study
C911A/C911D	*MATa*/*α*, *MFA2*/*MFA2*	This study
C911A *mfa2*Δ/C911D	*MATa*/*α*, C911A *mfa2*Δ::*KANMX4*/ C911D *MFA2*	This study
C911A/C911D *mfa2*Δ	*MATa*/*α*, C911A *MFA2*/ C911D *mfa2*Δ::*KANMX4*	This study
C911A *mfa2*Δ/C911D *mfa2*Δ	*MATa*/*α*, C911A *mfa2*Δ::*KANMX4*/C911D *mfa2*Δ::*KANMX4*	This study
AWRI1631	N96 *ho*Δ *MATa*	Borneman et al. (2008)
AWRI1631 *mfa2*Δ	*MATa*, *mfa2*Δ::*KANMX4*	Varela et al. (2012)
AWRI1633	N96 *ho*Δ *MATα*	AWRI, Australia
AWRI1633 *mfa2*Δ	*MATα, mfa2*Δ::*KANMX4*	This study
AWRI1631/AWRI1633	*MATa*/*α*, *MFA2*/*MFA2*	This study
AWRI1631 *mfa2*Δ/1633	*MATa*/*α*, 31 *mfa2*Δ::*KANMX4*/33 *MFA2*	This study
AWRI1631/1633 *mfa2*Δ	*MATa*/*α*, 31 *MFA2*/33 *mfa2*Δ::*KANMX4*	This study
AWRI1631 *mfa2*Δ/1633 *mfa2*Δ	*MATa*/*α*, 31 *mfa2*Δ::*KANMX4*/33 *mfa2*Δ::*KANMX4*	This study

Primers used in this study

Primers were sourced from Sigma Aldrich. The *MFA2* deletion cassette was amplified using primers *MFA2* Fwd (TGATAGTTTCCTTTTCCGTTAAGTG) and *MFA2* Rvs (TGGCTCAAAACTTTTTCACTTTTAC), whilst the mating type of a strain was identified with three primers (Huxley et al. 1990): *MAT* (AGTCACATCAAGATCGTTTATGG); *MATa* (ACTCCACTTCAAGTAAGAGTTTG) and *MATα* (GCACGGAATATGGGACTACTTCG).

Construction of *MFA2* deletants

To construct *MFA2* deletion mutants in haploid strains AWRI1633, C911A and C911D and diploid strain L2056, the *mfa2*Δ::*KanMX* deletion cassette was PCR amplified from genomic DNA of AWRI1631 *mfa2*Δ (Peter et al. 2017) and used to replace the endogenous *MFA2* gene by

homologous recombination (Gietz and Woods 2002). Transformants were selected on YPD agar containing 200 mg L^{-1} G418 sulfate (Ameresco) and confirmed by sequencing of the PCR amplicon (ORF::*KanMX*) encompassing the deletion cassette (Primers A and D; Table 2). The mating type was confirmed by PCR amplification across the HMR region (Huxley et al. 1990). Heterozygous diploid strain L2056 *MFA2/mfa2*Δ was sporulated in liquid medium (Codón et al. 1995) and individual tetrads dissected by micro manipulation (Guthrie and Fink 1991). L2056 *mfa2*Δ*/mfa2*Δ was then identified by PCR amplification of the *mfa2*Δ::*KanMX* deletion cassette for both alleles.

The following diploid wine yeast was constructed through mating the corresponding haploid *MAT*a and *MAT*α strains: C911A/C911D, C911A *mfa2*Δ/C911D, C911A/C911D *mfa2*Δ, C911A *mfa2*Δ/C911D *mfa2*Δ*,* AWRI1631/1633, AWRI1631 *mfa2*Δ/1633, AWRI1631/1633 *mfa2*Δ and AWRI1631 *mfa2*Δ/1633 *mfa2*Δ. Fresh cultures from YPD plates were mixed thoroughly on thin YEPD plates and incubated for 4 hours at 30 °C. Actively mating cells were isolated using a micromanipulator and their identity confirmed by sequence analysis of PCR amplicons encompassing the deletion cassettes.

Fermentation conditions

Triplicate 100 ml fermentations in CDGJM (75 mg N L^{-1}) were carried out at 28 °C using 250 ml flasks fitted with airlocks (Walker et al. 2003), with agitation. Fermentations were monitored by measuring residual sugar enzymatically (Walker et al. 2014) and considered finished when the residual sugars were <2 g L^{-1}. Growth was estimated at regular intervals by measurement of optical density (OD_{600}) at 600 nm. Yeast cultures at the end of fermentation were stained with propidium iodide and analyzed by flow cytometry for total cell numbers using a Guava easyCyte™ 12 HT FACS analyzer. Where haploid cultures tended to flocculate, they were sonicated for 30 seconds before staining. Dry cell weight was also determined in duplicate from terminal samples (Salmon 1997).

Statistical analysis

Fermentation duration, total cell count and biomass yield are presented as a mean of triplicates along with their standard deviation (SD). Student's t-test (two tailed) was used to identify statistically significant differences between two samples with a p-value <0.05.

4.4 Results

Effect of deletion of *MFA2* on fermentation performance of wine yeast derivatives

Previously we have reported that deletion of *MFA2* in the haploid wine yeast strain AWRI1631 resulted in a shortening of a nitrogen-limited fermentation by ~34% (Peter et al. 2017). To determine the dependence of this phenotype on strain background and ploidy, we first evaluated the fermentation performance of *MFA2* gene deletions in both haploid mating types of derivatives of two wine strains, N96 and L2056. Then the influence of gene dosage was assessed by comparing fermentation performance of the diploid versions, both homozygous and heterozygous for *MFA2*.

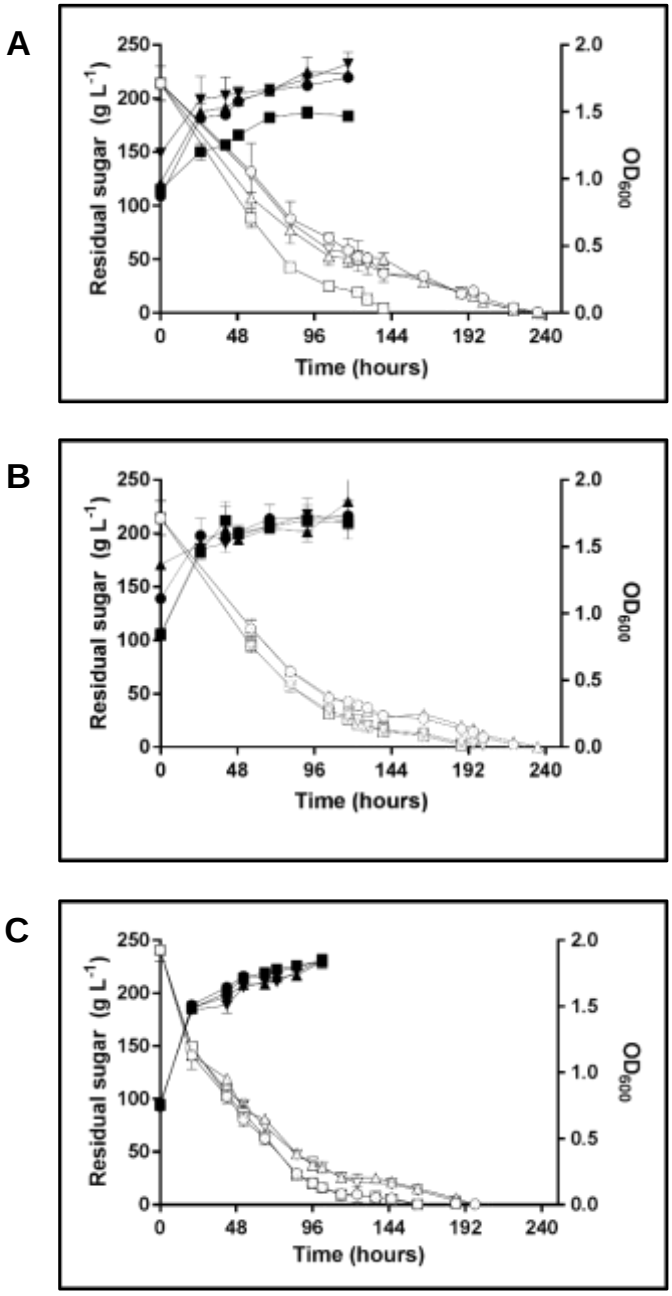

Figure 1. Fermentations of *MFA2* deletants. Fermentations (100 mL) were conducted in triplicate in CDGJM with 75 mg N L^{-1}. Sugar consumption was monitored enzymatically and reported as total sugars (open symbols). Growth was monitored as optical density at 600 nm (solid symbols). Data points are mean values of triplicate data with standard deviation as error bars. **(A)** AWRI1631 and AWRI1633 (haploids); Circle, AWRI1631; square, AWRI1631 *mfa2*; upright triangle, AWRI1633; inverted triangle, AWRI1633 *mfa2*Δ. **(B)** AWRI1631/AWRI1633 (diploids); Circle, AWRI1631/AWRI1633; square, AWRI1631 *mfa2*Δ/1633; upright triangle, AWRI1631/1633 *mfa2*Δ; inverted triangle, AWRI1631 *mfa2*Δ/AWRI1633 *mfa2*Δ. **(C)** C911A and C911D (haploids); Circle, C911A; square, C911A *mfa2*Δ; upright triangle, C911D; inverted triangle, C911D *mfa2*Δ.

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Table 2. Fermentation duration, total cell count and biomass yield of AWRI1631, AWRI1633 and their *MFA2* deletants.

Strains	MT	FD (h)	FD% of WT	TCC (x 10^7)	TBY (g L^{-1})	B / cell (pg)	B% of WT
AWRI1631	*MATa*	235 ± 0	100 ± 0	12.3 ± 0.2	4.1 ± 0.2	33.3	100
AWRI1631 *mfa2*Δ	*MATa*	146 ± 0*	62 ± 0	8.19 ± 0.2*	2.0 ± 0.4*	25.2	76
AWRI1633	*MATα*	230 ± 9	100 ± 0	14.0 ± 0.8	4.4 ± 0.0	31.7	100
AWRI1633 *mfa2*Δ	*MATα*	230 ± 9	100 ± 6	13.6 ± 0.7	4.5 ± 0.3	33.6	106
AWRI 1631/AWRI1633	*MATa/α*	230 ± 9	100 ± 0	9.60 ± 0.5	4.2 ± 0.1	44.5	100
AWRI1631 *mfa2*Δ/1633	*MATa/α*	190 ± 5*	82 ± 2	8.52 ± 1.2	2.9 ± 0.1*	34.0	77
AWRI1631/1633 *mfa2*Δ	*MATa/α*	235 ± 0	104 ± 0	9.44 ± 0.1	4.4 ± 0.2	46.6	105
AWRI1631 *mfa2*Δ/1633 *mfa2*Δ	*MATa/α*	201 ± 0*	87 ± 0	8.65 ± 0.9	3.2 ± 0.2*	37.0	83

WT, Wildtype; MT, Mating type; FD, Fermentation duration; TCC, Total cell count (cells mL^{-1} ± SD); TBY, Total biomass yield; B, Biomass; Wildtype strains are written in bold text and *MFA2* deletants are written in plain text. * Values that are significantly different to the wildtype ($p < 0.05$, two-tailed Student's t-test).

In the AWRI1631 and AWRI1633 backgrounds, only AWRI1631 *mfa2*Δ (*MATa*) was capable of reducing fermentation duration (by 38%), which is similar to our previous finding (Peter et al. 2017). For instance, deletion of *MFA2* from AWRI1633 (*MATα*) did not result in reduced fermentation as occurred for AWRI1631 *mfa2*Δ (*c.a.* 230 vs. 146 hrs, Fig. 1A and Table 2). To evaluate the influence of ploidy, diploid heterozygous and homozygous strains were made by mating wildtype or deletant forms of AWRI1631 and AWRI1633. Investigation of these diploids, identified strains with shortened fermentation duration when the *MFA2* deletion was in the AWRI1631 background. For example, AWRI1631/1633 *mfa2*Δ completed fermentation in a similar time to the wildtype (235 vs. 230 h, Fig. 1B and Table 2). Interestingly the heterozygous diploid (AWRI1631 *mfa2*Δ/1633) was slightly more efficient than the homozygous diploid (AWRI1631 *mfa2*Δ/1633 *mfa2*Δ), completing fermentation in 82% of the time of the wildtype (compared to 87%, Fig. 1B and Table 2). Conversely, deletion of *MFA2* from L2056 derivatives (C911A, C911D) did not shorten fermentation, either in the haploid (Fig. 1C and Table 3) or diploid homozygous or heterozygous deletions (see Appendix 11 and 12, Pg 194 and 195). Notably, strains C911A and

C911D, derived from the same background had a difference of 36 hours in fermentation duration (*c.a.* 162 vs. 198 hours, Fig. 1C and Table 3).

In addition to fermentation performance, deletion of *MFA2* in AWRI1631 affected growth, as estimated by a 25% reduction in optical density for AWRI1631 *mfa2*Δ compared to the wildtype (Fig. 1A). No effect was observed in AWRI1633 *mfa2*Δ. Total cell number, dry cell biomass and subsequently biomass/cell was calculated from terminal fermentation samples (Table 2 and 4). AWRI1631 *mfa2*Δ (*MAT*a) exhibited a reduced total cell number and biomass yield and therefore the biomass per cell was less than the wildtype (*c.a.*76%). In AWRI1633 *mfa2*Δ (*MAT*α) and AWRI1631/AWRI1633 *mfa2*Δ (heterozygous diploid) deletion of *MFA2* did not result in a reduction in the cell number or biomass yield. In fact, it resulted in a slight increase in biomass yield (~6%). However, deletion of *MFA2* in heterozygous AWRI1631 *mfa2*Δ/AWRI1633 and homozygous AWRI1631 *mfa2*Δ/AWRI1633 *mfa2*Δ diploids resulted in a reduction of total cell number and biomass yield, with biomass per cell calculated to be 77 and 83% of the wildtype AWRI1631/1633, respectively (Table 2).

In L2056, heterozygous and homozygous *MFA2* deletants resulted in a reduced total cell number, biomass yield and biomass per cell (c.a.77 and 85%). C911D *mfa2*Δ (*MAT*a) and C911A/C911D *mfa2*Δ had similar total cell numbers to their wildtype, however, a significant difference in biomass yield, with biomass per cell reduced to 59 and 70% of their respective wildtypes. Compared to C911A *mfa2*Δ (*MAT*α), C911A *mfa2*Δ/C911D and C911A *mfa2*Δ/C911D *mfa2*Δ, deletion of *MFA2* did not result in a noticeable difference in cell number or biomass yield (Table 3).

Table 3. Fermentation duration, residual sugar, total cell count and biomass yield of L2056, C911A, C911D and their *MFA2* deletants.

Strains	MT	FD (h)	FD % of WT	TCC (x 10^7)	TBY (g L^{-1})	B / cell (pg)	B% of WT
L2056	*MAT*a/α	142 ± 6	100 ± 0	9.6 ± 1.0	3.5 ± 0.2	36.4	100
L2056 *MFA2* *mfa2*Δ	*MAT*a/α	145 ± 0	102 ± 0	13.2 ± 1.2*	3.7 ± 0	28.1	77
L2056 *mfa2*Δ *mfa2*Δ	*MAT*a/α	151 ± 1	102 ± 3	14.2 ± 0.2*	4.3 ± 0.3*	30.9	85
C911A	*MAT*α	162 ± 0	100 ± 0	19.3 ± 0.9	5.9 ± 1.4	30.6	100
C911A *mfa2*Δ	*MAT*α	162 ± 0	100 ± 0	21.1 ± 1.1	7.0 ± 1.4	33.2	108
C911D	*MAT*a	198 ± 0	100 ± 0	20.6 ± 1.4	6.7 ± 1.3	32.6	100
C911D *mfa2*Δ	*MAT*a	198 ± 0	100 ± 0	20.4 ± 1.3	3.9 ± 0.1*	19.1	59
C911A/C911D	*MAT*a/α	186 ± 0	100 ± 0	13.4 ± 1.4	4.0 ± 0.1	29.5	100
C911A *mfa2*Δ/C911D	*MAT*a/α	186 ± 0	100 ± 0	12.8 ± 1.2	3.7 ± 0.1*	29.0	98
C911A /C911D *mfa2*Δ	*MAT*a/α	186 ± 0	100 ± 0	12.5 ± 1.3	2.6 ± 0.7*	20.5	70
C911A *mfa2*Δ/ C911D *mfa2*Δ	*MAT*a/α	186 ± 0	100 ± 0	12.9 ± 0.8	3.7 ± 0*	28.7	97

WT, Wildtype; MT, Mating type; FD, Fermentation duration; TCC, Total cell count (cells mL^{-1} ± SD); TBY, Total biomass yield; B, Biomass; Wildtype strains are written in bold text and *MFA2* deletants are written in plain text. * Values that are significantly different to the wildtype ($p < 0.05$, two-tailed Student's t-test)

4.5 Discussion

Role of *MFA2* deletion in fermentation is specific to AWRI1631 (*MATa* haploid of N96)

In this study, we report that deletion of *MFA2* in AWRI1631 (*MATa* haploid of N96) shortened fermentation duration by 38% in CDGJM supplied with limited (75 mg N L^{-1}) nitrogen. To determine whether mating type influenced fermentation phenotype, *MFA2* was deleted in AWRI1633 (*MATα* haploid of N96). Replacement of the *MFA2* gene in AWRI1633 by the *mfa2::KanMX* deletion cassette (amplified from AWRI1631 *mfa2*Δ), did not affect fermentation, with the mutant behaving similarly to the wildtype. Gene dosage was also investigated to assess whether deletion of one or both copies of *MFA2* in the diploid could influence fermentation duration and growth. Interestingly, in the diploid (AWRI1631/1633) strains capable of reduced fermentation only when *mfa2*Δ originated from AWRI1631. Minor differences were observed between the

heterozygous (AWRI1631 *mfa2*Δ/AWRI1633) and homozygous (AWRI1631 *mfa2*Δ/AWRI1633 *mfa2*Δ*)* diploids, which completed fermentation in 18 and 13% less time taken than the wildtype, respectively. These findings confirm that the shortened fermentation of the *MFA2* deletion in N96 derivatives was specific to being carried on genetic material derived from a *MATa* cell. The finding that homologous replacement of the *MFA2* gene by the *mfa2*Δ*::KanMX* cassette (from AWRI1631 *mfa2*Δ) in AWRI1633 (*MATα*) did not result in altered fermentation alludes to a functional and interactional difference of *MFA2* in the two cell types. *MFA2,* together with *MFA1*, is responsible for the production of mating a-factor pheromone solely in *MATa* cells (Michaelis and Herskowitz 1988) whereas, *MFα1* and *MFα2* produce mating α-factor pheromone merely in *MATα* cells. However, deletion of *MFA1* from AWRI1631 *(MATa)* did not result in a similar reduction in fermentation duration (Peter et al. 2017), and further investigation of *MFα1 and MFα2* is required. Previous studies have reported that the expression of 'a-specific' genes is repressed in *MATα* and diploid (*MATa/MATα*) cells in cell-type regulation (Galgoczy et al. 2004; Johnson 1995; Johnson and Herskowitz 1985).

These findings are novel as this is the first report of *MFA2* having dual effects, on mating and fermentation, specifically in *MATa* cells. Interestingly, *MATα2* is known to exhibit pleiotrophy, with reports of the gene being involved in cross talk between cell-type regulation and the HOG pathway for pheromone-responsive genes in *MATα* cells during mating (Baltanás et al. 2013; Galgoczy et al. 2004; O'Rourke and Herskowitz 1998). Another gene, *MDF1* (*YCL058C*), formally known as *FYV5*, is also involved in the regulation of mating. Mdf1p is thought to promote vegetative growth in *MATα* cells in a rich medium, by suppressing mating efficiency, through binding to *MATα2* (Li et al. 2010). Furthermore, Li et al. (2014) propose that Mdf1p shortens the lag phase, by interacting with Snf1p, central to non-fermentable carbon utilisation, enabling the rapid consumption of glucose during early exponential growth in rich media. It is unclear whether deletion of these genes, as well as others such as *MCM1,* involved in cell-type regulation, affected fermentation in other strains. Also, how deletion of *MFA2* shorten fermentation duration or provided yeast with an adaptive advantage in grape juice to enable improved fermentation performance is yet to be determined.

AWRI1631 *mfa2*Δ have improved fermentation capacity for a given cell population

Deletion of *MFA2* in AWRI1631 resulted in shortened fermentation under limited nitrogen conditions. However, growth was significantly affected resulting in decreased cell number and biomass, with biomass per cell reduced by 24%. Our findings are contrary to the consensus that

fermentation rate is correlated with biomass, which is particularly important in nitrogen deficient conditions, common to problematic 'sluggish' fermentations. Thus in comparison, Varela et al. (2004) demonstrated that reduced metabolic activity (sugar catabolism) under limited nitrogen could be ameliorated by concentration of the biomass. In general, maximum fermentation rate (as CO_2 evolution) is related to maximum cell population for a given medium (Albertin et al. 2011), which further supports the hypothesis of a 'critical' biomass being required for efficient fermentation. This relationship holds true for yeast with high nitrogen demand (requirements), whereby nitrogen supplementation leads to higher fermentation rates through increased biomass and overall population numbers. However, in the case of yeast with lower nitrogen demand, higher fermentation rates are achieved with fewer cells, which are more metabolically active through increased glycolytic flux (Gutierrez et al. 2012). Canelas and co-workers (2010) made similar observations for chemostat cultures of CEN.PK113-7D having increased glucose uptake and reduced biomass yield compared to YSBN2. Further, expression of genes associated with biosynthesis and degradation of amino acid and protein significantly increased in CEN.PK113-7D. The authors proposed that as protein synthesis is an energy consuming process requiring more ATP, the strain increases glycolytic flux by driving more ATP and co-factors into protein (enzyme) synthesis rather than biomass formation (Canelas et al. 2010).

Similarly, deletion of *MFA2* in AWRI1631, which results in greater fermentation and reduced biomass formation may be due to increased protein turnover. Given that *MFA2* does interact with *UBI4*, encoding ubiquitin, which is conjugated to proteins targeted for degradation via the ubiquitin-26S proteasome (Drygin website; (Costanzo et al. 2010; Koh et al. 2010), it would be worth to investigate whether ubiquitin and protein turnover are affected in AWRI *mfa2*Δ.

Fermentation improvement in yeast by *MFA2* deletion is dependent upon genotype

To examine whether the effect of *MFA2* deletion in reducing fermentation duration was universal, we constructed and evaluated the fermentation performance of an *MFA2* deletion in C911A (*MATα*) and C911D (*MATa*); haploids of wine yeast Lalvin L2056. The failure of both *mfa2*Δ strains to shorten fermentation confirmed that the fermentation phenotype was not only reliant on *MATa* cell types but dependent on yeast genotype. This phenotypic variation between the two strains may reflect the degree of heterozygosity between L2056 and N96 (Borneman et al. 2016). Whole genome sequencing has identified a high level of inter-strain variation, as a result of evolutionary processes including single nucleotide polymorphisms (SNP's), Ty elements (number and arrangement), gene transfer, as well as insertion and deletion events. These variations are

sometimes specific to a strain, and the high variability in genes may be a reason for phenotypic diversification (Borneman et al. 2011; Borneman et al. 2008; Novo et al. 2009).

Although deletion of *MFA2* in C911D (*MATa*) did not result in the same ability to ferment sugars as the original *mfa2*Δ deletion in AWRI1631 (*MATa* haploid of N96), similarities between the strains were noted for growth and biomass formation. In both yeast genotypes, deletion of *MFA2* in the *MATa* strain resulted in reduced biomass formation. Conversely, deletion of *MFA2* in the corresponding *MATα* haploids, AWRI1633 *mfa2*Δ and C911A *mfa2*Δ, resulted in a slight increase in biomass per cell (6-8% wildtype) whilst fermentation performance was comparable to the wildtypes.

In the diploid N96 and L2056 derivatives, *mfa2*Δ on the *MATa* allele resulted in a reduction in the biomass yield. Also, we observed that heterozygous deletions were more affected than the homozygous deletions, which may be due to a 'rescue effect' rendered by the *MFA2* deletion originating from the *MATα* strain, which results in increased biomass formation. For example, the calculated biomass per cell of the heterozygous diploids were 77, 70 and 77 % of the wildtype for AWRI1631 *mfa2*Δ/1633, C911A/C911D *mfa2*Δ and L2056 *mfa2*Δ, respectively. Whereas the homozygous diploids resulted in 83, 85 and 97% of biomass per cell of the wildtype for AWRI1631 *mfa2*Δ/AWRI1633 *mfa2*Δ, C911A *mfa2*Δ/C911D *mfa2*Δ and L2056 *mfa2*Δ/*mfa2*Δ, respectively. Although L2056 and C911A/C911D strains are expected to be similar, they appear to differ in behaviour. Such a difference could be due to genetic differences arising through segregation of chromatids and genetic recombination during several rounds of mating and sporulation (meiosis) performed to construct these strains. Also with the heterozygous L2056 deletion, we are unsure of the mating type of allele bearing the *MFA2* deletion.

Gene dosage affecting fitness and fermentation profile in diploids

Past studies have investigated gene dosage to assess fitness profile, by deleting a copy of a gene in a diploid, which could result in growth advantage (haploproficiency) or disadvantage (haploinsufficiency) (Delneri et al. 2008; Piggott et al. 2011; Pir et al. 2012). Competitive fitness studies of the diploid heterozygous deletion collection grown in different conditions of limiting and non-limiting nutrients (Table 5) have shown the *MFA2/mfa2*Δ strain to be haploproficient (Delneri et al. 2008; Piggott et al. 2011).

Table 5. Fitness proficiency of heterozygous *MFA2* deletants in different culture conditions reported from previous studies.

Deletants (heterozygous)	Fitness proficiency	Culture condition	Reference
*MFA2/mfa2*Δ	HP	Synthetic grape juice	(Piggott et al. 2011)
*MFA2/mfa2*Δ	HP	C- and N- limitation	(Delneri et al. 2008)
*MFA2/mfa2*Δ	HP	C- , N- and P- limitation (dilution rate in chemostat 0.1,0.2 h^{-1})	(Pir et al. 2012)

HP denotes haploproficiency, C-, N-, P- denotes carbon, nitrogen and phosphorous respectively.

Contrary to these findings, specifically of Piggott et al. (2011) where research was in a synthetic grape juice, we have demonstrated that *MFA2/mfa2*Δ had reduced fitness in terms of growth (reduced cell number and biomass) although it was still capable of fermenting sugars quicker than the wildtype (conditional to the *mfa2*Δ originating from the *MATa* wildtype). The exact construction method of the heterozygous deletion strains (BY4743) used by Piggott et al. (2011) are not stated, thus it is possible that the differences observed may be due to the *mfa2*Δ carrying the *MATα* allele or more likely; genetic differences between the strains across the two studies or differences in cultural conditions and experimental design. In addition this study tested individual strains rather than looking at fitness in a pooled collection of the strains. When strains are evaluated individually for fermentation performance, growth does not necessarily relate to increased fermentation capacity (Canelas et al. 2010; Gutierrez et al. 2012). Here we report that deletion of *MFA2* in AWRI1631 (*MATa*) reduced fermentation duration under limited nitrogen conditions; this is a desirable attribute given that the yeast is more likely to succeed in nitrogen deficient juices and less liable to undergo starvation, leading to 'sluggish' or even 'stuck' fermentation.

In summary, strains which have a lower nitrogen demand, are considered beneficial, given that they do not require the same degree of supplementation as those of higher nitrogen demand and are likely to complete a nitrogen-limited fermentation with fewer difficulties. Thus seeking the genetic basis for such differences in nitrogen efficiency involving the *MFA2* gene was highlighted. We have demonstrated that deletion of *MFA2* gene shortens fermentation duration. However, the ability to do so was dependent upon genotype and mating type (i.e. only in AWRI1631, *MATa*). These findings pose several questions as to why the improved phenotype associated with this

particular gene deletion is limited to this strain. RNAseq analysis, whilst beyond the scope of this study, would be worthwhile in understanding the transcriptional differences between these strains during fermentation. Before concluding that *mfa2*Δ does not improve fermentation efficiency in other wine strains, it would be important to investigate the effect of this deletion in other wine yeast backgrounds. Also, further investigation into the expression of the genes associated with processes like biosynthesis and degradation of amino acid and proteins (as reported in Canelas et al. (2010)) might aid in uncovering the genetic basis of fermentation efficiency of AWRI1631 *mfa2*Δ.

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CHAPTER 5

General discussion, conclusions and future directions

5.1 General discussion and conclusions

Lack of sufficient yeast assimilable nitrogen is often the root cause of stuck and sluggish fermentations. The development of wine yeast that can efficiently utilise available nitrogen in deficient musts to maximise sugar catabolism would be of great benefit. These yeasts together with better management practices, such as appropriate timing and choice of nitrogen supplementation, will significantly reduce the occurrence of problematic fermentations and the associated reduction in wine quality. The availability of nitrogen efficient strains would also ideally reduce the wine maker's dependence on supplementation, and enable increased efficiency in vinification and tank throughput. Economic savings would be made due to a reduction in labour and processing costs (re-inoculation and supplementation) and a need to blend away poor quality wines, and would lead to overall increase in wine quality and value.

The generation of nitrogen efficient strains requires a greater understanding of nitrogen metabolism in relation to wine making fermentations. This project used the approach of screening prototrophic deletion libraries in laboratory and wine yeast backgrounds, to identify genes influencing fermentation efficiency under different nitrogen conditions. This effort resulted in revelation of cellular processes that influence fermentation efficiency and which are specific to a nitrogen insufficient environment.

5.1.1 Functional genomic tools identify key genes influencing fermentation in sufficient and limiting nitrogen conditions

Deletants with reduced fermentation duration were identified from both wine and laboratory yeast libraries with sufficient and limited nitrogen availability.

As a result of the screening experiments, we determined the following:

1. High throughput micro-fermentation identified gene deletions that allowed twice the sugar of the wildtype to be fermented (LYDL_HN, 748 deletants; WYDL_HN, 299 deletants and WYDL_LN, 257 deletants). Examination of the performance of deletants in limiting nitrogen revealed a subset of 127 genes that only exhibited improved fermentation in low nitrogen condition (WYDL). Deletants were also identified, which worsen fermentation performance (50% less sugar fermented vs the wildtype): (LYDL_HN, 501 deletants; WYDL_HN; 205 deletants and WYDL_LN; 187 deletants). Several of the fermentation essential genes identified as part of the laboratory yeast Fermentome (Walker et al. 2014), have also been demonstrated to be required by wine yeast in limited nitrogen. By comparison, the set of genes that

reduced fermentation time upon deletion are potential candidates for yeast strain improvement, whether as natural gene variants (having beneficial SNP/indels), CRISPR genome editing, mutagenesis or breeding, etc.

2. Comparison of the genes (those capable of catabolising more sugar within a specified time frame) from the micro-screens, identified genes that were common across strain backgrounds and/or were independent of initial nitrogen concentration. This data set was also compared to published data sets revealing genes shown to be regulated at the transcriptional level under similar conditions or affected by strain background. A Gene Ontology analysis of each data set revealed that genes common to WYDL_HN and WYDL_LN were enriched for genes involved in protein transport, catabolism, ubiqutination and cell communication. Of those associated with cell communication, 6 genes (*SHO1, BEM2, KSS1, ROM1, FLO11* and *MFA2*) were highlighted to be targets of the MAPK pathway. Further GO analysis of the 161 and 127 genes unique to WYDL_HN and WYDL_LN conditions, identified enrichment of genes for processes mainly involved in catabolic process and regulation in the high nitrogen condition. In the low nitrogen conditions, the gene set was enriched for processes such as ubiquination and protein turnover.

5.1.2. Screening of the wine yeast deletion library for fermentation efficient mutants in limiting nitrogen

Physiological studies have traditionally been conducted in laboratory yeast, which are easily genetically manipulated, and have enabled identification of a myriad of pathways related to yeast metabolism. This research is now being undertaken in industrial yeast to better understand the adaptive mechanisms behind fermentation (brewing, bread-making, sake and wine production).

In this study, the primary focus was the investigation of how wine yeast withstand fermentation stresses associated with nitrogen deficiency – a common cause of sluggish and stuck fermentations. A wine yeast deletion library was screened when insufficient nitrogen was available, to identify genes that confer fermentation efficiency when under nitrogen limitation. From the micro-fermentation screen (WYDL_LN), we shortlisted 96 candidates that were observed to utilise significantly more sugar than the wildtype, having approximately half the residual sugar of that of the wildtype, these were evaluated in laboratory-scale fermentation trials (100 mL). The main findings were the:

1. Identification of 15 strains that were fermentation efficient, reducing fermentation duration by 15-59%.
2. Gene Ontology analysis revealing enrichment for genes in processes related to ubiquitination and protein modification/turnover or metabolic processes: protein polyubiquitination (*UBI4, UBC13* and *MMS2*), protein deubiquitination (*UBP7, UBI4* and *BRO1*), protein modification by small protein conjugation (*UBP7, UBI4, BRO1, MMS2* and *UBC13*), post-translational protein modification (*UBP7, TPK2, UBI4, BRO1, MMS2* and *UBC13*), protein metabolic process (*UBP7, TPK2, UBI4, BRO1, MFA2, MMS2, MKT1, EAR1, UBC13* and *MRP17*) and endosomal transport (*MVB12, EAR1* and *BRO1*).

5.1.3 Investigation of an *MFA2* deletion in AWRI1631

Of the 15 wine deletants identified as fermentation efficient in limiting nitrogen, a deletion of *MFA2* (mating a-factor; involved in mating and cell-type regulation), resulted in a 55% decrease in fermentation duration. *MFA2* was further investigated to better understand how its deletion conferred fermentation efficiency, since this gene and the process of yeast mating have not previously been associated with fermentation. We also investigated the fermentation performance of the functionally redundant *MFA1,* encoding a-factor. Fermentation dynamics of *mfa1*Δ and *mfa2*Δ were studied in detail as well as the expression profile of *MFA1* and *MFA2*. The following observations were noted:

1. Unlike *MFA2*, deletion of *MFA1* did not confer fermentation efficiency.
2. Gene expression studies revealed upregulation of *MFA2* in AWRI1631 when grown in CDGJM with limiting nitrogen. Deletion of *MFA2* from AWRI1631 resulted in an increased expression of *MFA1*.
3. *MFA1* was upregulated by ~6 to 7-fold in the *MFA2* deletant at the initial sampling point (128 g L^{-1} residual sugar). Although *MFA1* expression declined subsequently, it remained ~4-fold higher than the wildtype

5.1.4 Fermentation performance of *mfa2*Δ is dependent on strain background, mating type and gene dosage

Further to understanding the role of *MFA2* in fermentation, studies were conducted to determine whether the effect of *mfa2*Δ was dependent on mating type, genotype, and/or gene dosage. Homozygous and heterozygous diploid *MFA2* deletants were constructed in genetic backgrounds derived from N96 (AWRI1633 *MATα;* AWRI1631 *MATa*) and L2056 (C911A *MATα;*

C9 11D *MATa*). These strains were compared to the equivalent *MFA2* wildtype strains in 100 mL fermentations. The following observations were made:

1. The fermentation efficient phenotype associated with *mfa2*Δ was dependent upon genotype and mating type, with the phenotype confined to AWRI1631 *MATa*.
2. The diploid AWRI1631/1633 strains enabled quicker fermentation when the *mfa2*Δ allele originated from the 'a' mating type strain (AWRI1631 *mfa2*Δ *MATa*).

5.2 Future directions

1. The involvement of *MFA2* and potentially the mating pheromone pathway in fermentation is novel. We hypothesize that mating pheromone production and processing is an energy consuming process. Therefore, down-regulating the synthesis/processing of mating a-factor, could lead to a saving in energy. This energy might be redirected to other processes such as sugar uptake and catabolism. Deletion of *MFA2* resulted in significantly increased transcription of *MFA1* (functionally redundant to *MFA2*), but deletion of *MFA1* did not result in fermentation improvement. Over-expression of *MFA1* when wildtype *MFA2* is present remains to be examined. The results suggest that deletion of *MFA2* could also affect other interacting genes. Of these *GAL10, GID7, HXT5, STL1* and *PCL6* are known to be involved in carbohydrate metabolism/transport and storage (Costanzo et al. 2016). Further investigation of these genes, and specifically their interaction with *MFA2* during fermentation is required to determine the mechanism(s) by which *MFA2* influences sugar uptake and metabolism.
2. Deletion of *MFA2* from the wine yeast strain L2056 was found not to improve fermentation efficiency. It is also important to generate this deletion in several other strains (as *MATa* haplotypes) and evaluate their performance before determining that this fermentation phenotype is specific to only AWRI1631 *mfa2*Δ. Transcriptomic analysis (RNA-Seq) would help to decipher the transcriptional differences between AWRI1631 *mfa2*Δ and wildtype during fermentation, enabling a better understanding of the dual function of this gene in cell-type recognition during mating and fermentation.
3. High-through screening exercises are powerful tools for identification of gene function through phenotypic studies, as they allow simultaneous evaluation of thousands of strains. This study encompassed identification of genes through genome-wide

screening of fermentation performance in juice-like conditions with different nitrogen content. These genes (and processes) add to our current understanding of the role of nitrogen in fermentation. Not only were genes identified as critical to fermentation (leading to protraction when deleted), several were shown to result in fermentation proficiency, and represent likely targets using non-GM techniques in the generation of nitrogen efficient strains.

4. Screening of the laboratory yeast deletion library when sufficient nitrogen was available led to identification of 548 genes that enabled a ~50% reduction in fermentation duration. These genes were absent in the wine yeast deletion collection. Construction of these in a wine yeast background and subsequent evaluation of fermentation performance is worthwhile to determine whether they are potential candidates for wine yeast improvement. Also, growth of the laboratory yeast deletion library in a nutrient rich media without selective pressure, resulted in plasmid instability, possibly due to the rapid multiplication of yeast cells, failing to replicate the plasmid along with the chromosomal DNA (Kleinman et al. 1986; Caunt et al. 1988; Impoolsup et al. 1989). Contrary to Mülleder et al. (2012), this study suggests that the library is better grown in minimal media (ammonium sulfate only) to ensure retention of plasmid-based prototrophy.
5. In addition to the deletants identified as able to reduce fermentation duration, deletants extending fermentation were also identified in each micro-screen (LYDL_HN, 501 deletants; WYDL_HN, 205 deletants and WYDL_LN, 187 deletants), which were not tested further. These genes are worth further investigating to help increase understanding of the underlying processes and pathways involved.
6. Laboratory-scale (100 mL) testing of the deletants shortlisted from micro-fermentations identified candidates in the limiting nitrogen (75 mg L^{-1}) conditions. By comparison in sufficient nitrogen (450 mg L^{-1}), fermentation of the deletants and the wildtype was so rapid reducing the resolution between the strains. Therefore it is suggested that the available nitrogen be reduced from 450 mg L^{-1} to ~300 mg L^{-1} (industry standard), for similar investigations to provide greater separation of the strains.
7. In the micro-fermentations, 257 (WYDL_LN) and 299 (WYDL_HN) deletants were identified as potentially fermentation efficient, however only 92 were tested from each as this arbitrary number conveniently fit in an automated 96-flask fermentation platform (Peter et al. 2017) with the controls. The number of identified and confirmed

candidates has therefore likely not been exhausted and additional genes may be found through further evaluation.

8. As is the case for deletion libraries, over expression libraries (Gelperin et al. 2005; Jones et al. 2008) serve as a powerful tool to study gene function. The function of the identified genes could also be further determined by using an over-expression library to examine impact on a fermentation efficient phenotype, including whether it is restored to the wildtype.
9. The 15 wine yeast gene deletions identified to confer fermentation efficiency in limited nitrogen are worthy targets for industrial strain improvement. Should genome editing became acceptable for industrial strain construction and use in the wine industry (Bao et al. 2014), deletants constructed by this approach may be able to be used directly for the management of problematic fermentations associated with nitrogen deficient juice. Alternatively these genes may serve as targets for non-recombinant approaches. The 15 genes were mainly associated with protein turnover and ubiquitination. Of the genes involved in the degradation pathway, *BRO1, MVB12 and EAR1* have been extensively studied. Reports have shown that these genes regulate the degradation of amino acid permeases through ubiquination. Deletion of some of these genes disrupts this pathway reducing the rate of permease turnover (Nikko et al. 2003; Oestreich et al. 2007; Léon et al. 2008). In the conditions used in this study this may lead to increased retention of permeases on the cell membrane, thus increasing nutrient (i.e. nitrogen and sugar) uptake. The present study could be extended by investigating the ubiquitination process in these deletants during fermentation by using antibodies to study cellular localisation of plasma membrane transporters which might reveal the connection between ubiquitination and fermentation efficiency.
10. Gene deletion may affect other interacting genes, therefore investigating the key genes interacting with those highlighted genes may address how these deletants elicit their effect on fermentation efficiency. Traditional gene expression profiling by methods such as qPCR is effective in defining the expression pattern of genes during fermentation. A comparison of changes in the expression levels of interacting genes (mainly involved in adaptation to low nitrogen, nitrogen metabolism, stress regulation, sugar uptake and metabolism) in the wildtype and deletants would help define the role of the deletions in the network. Alternatively, gene array techniques such as micro or macro arrays or RNA sequencing that permit high throughput genome wide transcript

profiling could be used to study the expression of all annotated genes at the same time. Past comparative transcriptomic analysis has enhanced understanding of how yeasts differ in their physiological response to nitrogen composition/content during fermentation (Rossignol et al. 2003; Mendes-Ferreira et al. 2007a; Barbosa et al. 2015). Rossignol et al. (2003) reported over a thousand genes that changed expression at different stages of fermentation to adapt to the changing environment. Therefore genome wide expression profiling of the identified deletants during fermentation would help identify the key gene sets and processes contributing to fermentation proficiency in low nitrogen conditions.

11. The genetic basis of a specific phenotype can be identified through QTL mapping. This technique has been successfully used to identify the genetic basis for physiological traits in nitrogen consumption (Brice et al. 2014; Jara et al. 2014; Cubillos et al. 2017). Similar to these studies, to understand the effect of genes influenced by high nitrogen and low nitrogen during fermentation, bi-parental/ multi-parental crosses between the high nitrogen and low nitrogen users can be used to identify the genetic basis of variation in the F2 progeny, which will help relate the nitrogen efficiency phenotype to genotype.

Overall, this study has identified several genes influencing fermentation in various nitrogen conditions and strains backgrounds. We have identified gene sets that are needed for successful fermentation in high and low nitrogen conditions. Deletions that resulted in protracted fermentation, highlight the importance of those genes in stressful conditions such as low nitrogen. The set of gene deletions that positively influence fermentation are potential candidates for yeast strain improvement and the knowledge generated here could be used to formulate strategies to produce improved wine yeast for the future.

APPENDICES

Appendix 1. Micro-fermentation data of the LYDL_HN (all candidates).

ORF.name	Strain	Optical density at 600 nm at regular intervals (h)						GLUCOSE		FRUCTOSE		TOTAL SUGARS (g/l)		TOTAL AMINO ACIDS (mg/L)
		0	26	33	48	59	78	102 h	118 h	102 h	118 h	102 h	118 h	102 h
YAL002W	*VPS8*	0.95	1.19	1.35	1.60	1.70	1.90	4.29	1.37	49.28	15.27	53.57	16.64	310.36
YAL004W	*YAL004w*	0.90	1.20	1.41	1.73	1.88	2.10	3.61	0.94	25.85	-0.03	29.46	0.91	196.73
YAL005C	*SSA1*	0.90	1.17	1.37	1.70	1.83	2.04	11.99	3.34	50.16	29.13	62.14	32.47	206.70
YAL007C	*ERP2*	0.95	1.18	1.43	1.79	1.95	2.16	3.16	1.56	28.96	8.67	32.12	10.23	220.25
YAL008W	*FUN14*	0.87	1.08	1.26	1.56	1.70	1.91	6.40	2.60	38.18	20.47	44.58	23.07	171.15
YAL009W	*SPO7*	0.91	1.20	1.42	1.73	1.87	2.07	7.96	1.62	36.53	7.66	44.49	9.28	221.72
YAL010C	*MDM10*	0.92	1.08	1.24	1.58	1.73	1.95	7.98	1.68	42.70	12.51	50.69	14.20	268.60
YAL011W	*SWC3*	0.90	1.04	1.19	1.52	1.67	1.90	31.88	16.39	78.25	59.17	110.13	75.56	217.61
YAL012W	*CYS3*	0.86	1.10	1.08	1.06	1.30	1.48	21.46	11.08	65.79	47.89	87.25	58.97	301.29
YAL013W	*DEP1*	0.88	1.12	1.30	1.59	1.72	1.91	20.82	10.47	65.98	59.69	86.80	70.16	197.96
YAL014C	*SYN8*	0.94	1.12	1.31	1.71	1.87	2.09	3.77	1.31	28.30	2.83	32.06	4.13	210.20
YAL015C	*NTG1*	0.89	1.10	1.24	1.55	1.67	1.88	7.16	1.66	39.40	7.35	46.56	9.01	245.97
YAL016C-B	*YAL016c-b*	0.85	1.08	1.16	1.63	1.80	1.94	16.37	5.00	69.13	32.31	85.49	37.32	329.24
YAL016W	*TPD3*	0.95	1.01	1.05	0.95	0.96	0.93	123.63	122.41	149.02	114.63	272.64	237.04	413.99
YAL017W	*PSK1*	0.90	1.15	1.35	1.68	1.81	2.01	16.14	1.87	62.23	15.39	78.38	17.26	213.62
YAL018C	*YAL018c*	0.92	1.17	1.33	1.65	1.79	2.00	6.34	1.41	38.41	8.11	44.76	9.52	235.87
YAL019W	*FUN30*	0.89	1.10	1.28	1.64	1.78	2.00	8.46	1.94	40.97	17.39	49.43	19.32	199.32
YAL020C	*ATS1*	0.89	1.15	1.36	1.71	1.85	2.05	13.67	1.87	65.48	19.64	79.14	21.51	217.19
YAL021C	*CCR4*	0.89	1.09	1.12	1.22	1.38	1.49	81.62	77.21	104.20	124.61	185.82	201.83	386.01
YAL021C	*CCR4*	0.87	1.23	1.27	1.50	1.69	1.83	70.85	59.69	114.80	102.89	185.64	162.58	370.41
YAL022C	*FUN26*	0.89	1.09	1.25	1.53	1.70	1.94	2.21	1.20	16.63	-0.42	18.84	0.78	164.88
YAL023C	*PMT2*	0.88	1.00	1.09	1.29	1.39	1.57	5.22	1.26	34.84	5.87	40.06	7.14	186.79
YAL024C	*LTE1*	0.84	1.07	1.09	1.27	1.54	1.84	23.39	9.97	76.96	52.90	100.35	62.87	314.74
YAL026C	*DRS2*	0.88	1.08	1.23	1.52	1.63	1.82	16.25	2.86	53.59	21.91	69.84	24.77	271.22
YAL027W	*SAW1*	0.91	1.11	1.33	1.57	1.73	1.92	11.70	1.29	48.92	9.87	60.62	11.16	218.15
YAL028W	*FRT2*	0.89	1.15	1.38	1.72	1.86	2.07	10.37	1.47	45.32	7.95	55.69	9.42	234.02
YAL029C	*MYO4*	0.94	1.12	1.29	1.58	1.71	1.94	9.36	1.47	44.26	8.57	53.62	10.04	193.06
YAL030W	*SNC1*	0.91	1.14	1.33	1.71	1.85	2.08	3.57	1.41	23.15	2.46	26.72	3.86	236.59
YAL031C	*GIP4*	0.89	1.12	1.30	1.61	1.76	1.98	3.24	1.26	29.52	0.09	32.76	1.35	242.63
YAL034C	*FUN19*	0.90	1.15	1.33	1.65	1.79	2.01	10.77	1.53	46.84	13.43	57.61	14.95	243.27
YAL035W	*FUN12*	0.93	1.18	1.17	1.24	1.57	1.87	47.93	29.86	106.84	92.72	154.77	122.58	385.40
YAL035W	*FUN12*	0.96	1.11	1.13	1.16	1.43	1.75	39.20	17.47	88.54	68.72	127.75	86.18	375.21
YAL036C	*RBG1*	0.88	1.13	1.30	1.67	1.84	2.08	1.75	1.19	9.74	-1.21	11.48	-0.02	230.07
YAL037C-A	*YAL037c-a*	0.90	1.18	1.31	1.71	1.90	2.03	13.70	5.43	65.62	35.73	79.32	41.16	324.86
YAL037W	*YAL037w*	0.93	1.16	1.41	1.76	1.92	2.14	7.05	1.43	36.43	12.07	43.48	13.49	217.77
YAL039C	*CYC3*	0.89	1.03	1.05	0.93	0.92	0.89	127.35	126.01	119.25	140.36	246.60	266.37	509.09
YAL040C	*CLN3*	0.89	1.07	1.25	1.61	1.78	2.01	16.40	1.58	52.90	18.22	69.29	19.80	299.91
YAL042W	*ERV46*	0.90	1.14	1.36	1.70	1.86	2.06	5.41	1.28	34.06	7.19	39.47	8.47	251.32
YAL043C-a	*Unknown*	0.90	1.14	1.35	1.69	1.84	2.04	3.75	1.19	26.55	1.74	30.30	2.93	200.02
YAL044C	*GCV3*	0.88	1.07	1.22	1.54	1.68	1.90	8.39	1.27	39.46	11.29	47.85	12.56	297.21
YAL044W-A	*YAL044w-a*	0.89	1.13	1.31	1.73	2.00	2.17	17.99	4.82	69.27	33.77	87.26	38.59	327.23
YAL045C	*YAL045c*	0.94	1.17	1.36	1.74	1.88	2.07	6.70	1.38	36.39	7.00	43.09	8.38	279.26
YAL046C	*AIM1*	0.88	1.09	1.21	1.47	1.60	1.82	5.67	1.32	35.56	9.21	41.22	10.53	243.62
YAL047C	*SPC72*	0.91	1.17	1.17	1.16	1.31	1.45	65.07	52.24	112.69	105.74	177.76	157.98	331.55
YAL048C	*GEM1*	0.85	0.98	1.00	0.86	0.85	0.82	126.38	127.94	124.25	141.24	250.63	269.18	510.03
YAL048C	*GEM1*	0.92	1.11	1.11	1.01	1.24	1.67	57.17	36.83	105.89	87.97	163.06	124.80	339.27
YAL049C	*AIM2*	0.94	1.23	1.43	1.82	1.98	2.19	1.79	1.28	13.10	-0.32	14.89	0.96	262.16
YAL049C	*AIM2*	1.00	1.39	1.52	1.97	2.10	2.17	12.08	0.76	59.94	6.79	72.02	7.55	303.81
YAL051W	*OAF1*	0.91	1.17	1.33	1.72	1.89	2.12	1.44	1.45	8.55	-1.06	9.99	0.39	224.42
YAL053W	*FLC2*	0.93	1.22	1.37	1.78	1.81	1.95	1.54	1.20	5.62	-1.35	7.16	-0.15	244.72
YAL054C	*ACS1*	0.95	1.30	1.48	1.85	2.05	2.17	17.35	7.83	59.10	39.29	76.45	47.12	341.08
YAL055W	*PEX22*	0.97	1.18	1.42	1.81	1.97	2.18	19.06	3.29	59.79	28.55	78.84	31.84	248.31
YAL056W	*GPB2*	0.89	1.14	1.36	1.72	1.90	2.13	1.39	0.68	13.27	0.53	14.66	1.22	76.77
YAL058C-A	*Unknown*	0.97	1.41	1.60	1.98	2.15	2.28	10.31	6.02	44.50	30.65	54.81	36.67	307.85
YAL058W	*CNE1*	0.89	1.13	1.35	1.69	1.84	2.05	10.66	1.52	43.11	11.99	53.77	13.50	237.51
YAL059W	*ECM1*	0.90	1.12	1.32	1.71	1.87	2.08	10.26	1.08	46.10	7.47	56.36	8.55	235.12
YAL060W	*BDH1*	0.89	1.15	1.38	1.73	1.88	2.08	19.22	4.17	66.02	30.59	85.24	34.76	296.12
YAL061W	*BDH2*	0.94	1.25	1.49	1.88	2.02	2.21	2.68	1.22	21.40	0.69	24.09	1.91	160.85
YAL062W	*GDH3*	0.95	1.18	1.38	1.77	1.92	2.11	10.18	1.87	47.13	14.45	57.31	16.33	194.70
YAL064C-A	*YAL064c-a*	0.98	1.46	1.67	2.05	2.20	2.29	3.77	3.59	40.51	38.80	44.28	42.39	229.37
YAL065C	*YAL065c*	0.90	1.14	1.32	1.66	1.83	2.09	1.09	1.19	6.11	-1.19	7.19	0.00	58.78
YAL066W	*YAL066w*	0.92	1.23	1.46	1.82	1.97	2.17	7.28	1.23	36.43	6.28	43.71	7.51	239.22
YAL067C	*SEO1*	0.90	1.17	1.36	1.71	1.85	2.04	5.81	1.78	36.35	15.29	42.16	17.07	149.30
YAL067W-A	*YAL067w-a*	0.99	1.34	1.51	1.91	2.04	2.18	12.54	5.44	63.57	37.28	76.11	42.72	315.35
YAL068C	*PAU8*	0.94	1.22	1.41	1.78	1.93	2.14	6.28	1.54	34.18	10.96	40.46	12.50	187.29
YAR002C-A	*ERP1*	0.90	1.08	1.28	1.72	1.90	2.10	5.30	0.85	45.15	15.37	50.45	16.22	288.98
YAR002W	*NUP60*	0.92	1.15	1.34	1.67	1.80	2.01	11.35	1.28	48.86	7.33	60.20	8.61	177.77
YAR003W	*SWD1*	0.92	1.22	1.44	1.74	1.87	2.08	11.09	1.52	49.07	11.89	60.16	13.41	261.56
YAR014C	*BUD14*	0.98	1.19	1.37	1.77	1.97	2.24	1.81	1.09	5.35	-1.50	7.16	-0.41	342.79
YAR015W	*ADE1*	0.93	1.17	1.21	1.10	1.18	1.27	107.19	101.92	122.68	118.22	229.86	220.13	495.70
YAR018C	*KIN3*	0.89	1.03	1.16	1.49	1.64	1.87	11.79	1.90	47.13	10.26	58.92	12.16	258.79
YAR020C	*PAU7*	0.90	1.14	1.32	1.60	1.73	1.95	8.97	1.41	43.25	7.85	52.21	9.26	201.14
YAR023C	*YAR023c*	0.88	1.11	1.30	1.64	1.78	1.99	9.12	1.60	42.33	14.36	51.45	15.95	303.00
YAR027W	*UIP3*	0.89	1.16	1.39	1.70	1.85	2.06	3.18	1.55	24.30	9.29	27.48	10.84	191.65
YAR028W	*YAR028w*	0.95	1.24	1.50	1.89	2.04	2.23	3.98	1.36	33.21	9.66	37.19	11.02	168.25
YAR029W	*YAR029w*	0.93	1.19	1.39	1.98	1.93	1.93	2.59	1.15	24.32	-0.13	26.91	1.02	212.87
YAR030C	*YAR030c*	0.93	1.24	1.45	1.82	1.98	2.21	1.59	1.29	5.66	-0.82	7.25	0.47	252.69
YAR031W	*PRM9*	0.90	1.16	1.36	1.69	1.83	2.03	7.27	1.39	45.36	7.62	52.63	9.01	222.19
YAR035C-A	*YAR035c-a*	0.94	1.27	1.43	1.83	1.97	2.11	11.96	4.33	63.57	31.54	75.53	35.87	309.27
YAR035W	*YAT1*	0.89	1.14	1.32	1.62	1.76	1.97	10.24	1.62	50.22	8.30	60.46	9.92	220.20
YAR037W	*Unknown*	0.89	1.12	1.28	1.55	1.68	1.90	6.02	1.54	36.16	4.57	42.18	6.12	221.35
YAR040C	*Unknown*	0.95	1.17	1.38	1.71	1.85	2.08	6.45	1.54	37.89	6.82	44.34	8.36	198.22
YAR042W	*SWH1*	0.87	1.11	1.28	1.62	1.80	2.05	1.45	1.18	4.16	-1.85	5.62	-0.67	186.14
YAR042W	*SWH1*	1.00	1.42	1.60	1.95	2.10	2.22	3.73	0.45	38.88	8.50	42.61	8.95	282.41
YAR043C	*Unknown*	0.92	1.12	1.28	1.63	1.81	2.06	1.25	1.28	-0.38	-1.85	0.87	-0.58	126.76
YAR044W	*OSH1*	0.88	1.08	1.26	1.58	1.74	1.97	2.48	1.46	22.14	4.79	24.63	6.25	230.41
YAR047C	*YAR047c*	0.90	1.12	1.30	1.62	1.78	2.00	4.47	1.31	35.60	7.00	40.07	8.31	218.17
YAR050W	*FLO1*	1.04	1.54	1.76	2.13	2.26	2.34	13.46	10.22	50.03	42.74	63.49	52.96	340.41
YBL001C	*ECM15*	1.03	1.47	1.61	2.05	2.18	2.27	14.02	5.39	60.85	35.21	74.87	40.59	318.56
YBL002W	*HTB2*	0.89	1.05	1.03	0.92	0.92	0.89	124.36	120.84	141.88	105.94	266.24	226.78	476.31
YBL003C	*HTA2*	0.90	1.25	1.33	1.68	1.87	2.07	6.15	3.38	35.22	14.27	41.37	17.65	311.31
YBL005W	*PDR3*	0.81	0.94	0.91	1.12	1.38	1.66	44.92	28.39	85.41	77.08	130.33	105.48	368.68
YBL006C	*LDB7*	0.87	1.12	1.17	1.52	1.71	1.90	15.99	9.15	56.15	43.39	72.14	52.54	315.98
YBL007C	*SLA1*	0.87	1.23	1.24	1.48	1.71	1.86	6.08	9.16	48.30	53.66	54.38	62.82	265.57
YBL007C	*SLA1*	0.90	1.10	1.11	1.18	1.48	1.68	19.07	8.51	69.20	46.56	88.26	55.07	311.67
YBL007W		0.91	1.05	0.98	0.94	0.96	0.90	100.43	98.84	110.30	109.67	210.73	208.51	498.59
YBL008W	*HIR1*	0.87	1.15	1.23	1.56	1.73	1.89	12.63	4.59	52.11	29.78	64.74	34.37	337.42
YBL008W-A	*YBL008w-a*	0.87	1.15	1.29	1.66	1.86	2.04	7.71	1.25	51.69	16.22	59.40	17.46	299.53
YBL009W	*ALK2*	0.89	1.20	1.33	1.73	1.91	2.05	11.67	7.48	50.19	39.63	61.86	47.11	325.31
YBL010C	*YBL010c*	0.85	1.13	1.30	1.61	1.83	1.93	26.60	21.64	73.14	68.72	99.74	90.36	344.75
YBL011W	*SCT1*	0.89	1.17	1.31	1.71	1.89	2.03	12.61	4.13	51.05	26.74	63.65	30.87	328.70
YBL012C	*YBL012c*	0.87	1.00	0.96	0.92	0.92	0.89	99.90	100.81	108.34	110.79	208.24	211.60	480.22
YBL013W	*FMT1*	0.90	1.14	1.24	1.62	1.81	1.95	8.15	2.93	41.89	7.68	50.04	10.61	322.78
YBL013W	*FMT1*	0.98	1.35	1.55	1.89	2.08	2.22	4.20	5.22	36.27	35.17	40.47	40.39	287.52
YBL015W	*ACH1*	0.91	1.20	1.37	1.79	1.97	2.09	4.84	2.56	33.44	7.23	38.28	9.79	294.39
YBL015W	*ACH1*	0.92	1.28	1.45	1.82	2.04	2.17	6.15	3.31	44.64	28.76	50.79	32.06	293.62
YBL016W	*FUS3*	0.94	1.10	1.03	1.03	1.17	1.45	103.86	100.26	114.50	110.98	218.36	211.24	520.48
YBL017C	*PEP1*	0.88	1.22	1.33	1.67	1.83	1.96	6.13	7.34	37.35	38.08	43.48	45.42	320.63
YBL019W	*APN2*	0.84	1.16	1.28	1.68	1.86	2.02	10.59	7.10	47.66	37.62	58.25	44.71	328.57
YBL021C	*HAP3*	0.87	1.21	1.35	1.76	1.94	2.09	10.43	4.80	48.03	27.76	58.46	32.56	328.96
YBL022C		0.93	1.08	1.04	1.14	1.33	1.53	83.85	81.64	106.05	106.85	189.89	188.49	499.66
YBL022C	*PIM1*	0.85	1.16	1.13	0.95	0.93	0.85	126.42	120.96	138.96	136.83	265.38	257.79	519.52
YBL022C	*PIM1*	0.85	1.13	1.11	0.94	1.01	0.93	126.49	121.39	123.32	117.27	249.80	238.65	541.20
YBL024W	*NCL1*	0.91	1.21	1.31	1.74	1.97	2.15	4.29	3.35	34.79	19.83	39.08	23.18	256.35
YBL027W	*RPL19b*	0.87	1.12	1.20	1.57	1.78	1.95	23.04	9.61	68.58	49.89	91.63	59.50	340.36
YBL028C	*YBL028c*	0.89	1.22	1.36	1.73	1.90	2.04	13.51	4.34	54.56	26.57	68.06	30.91	333.87
YBL029C-A	*YBL029c-a*	0.86	1.14	1.28	1.65	1.83	1.98	8.19	2.18	55.33	23.47	63.51	25.65	295.27
YBL029W	*YBL029w*	0.90	1.24	1.39	1.77	1.95	2.09	15.03	3.24	58.97	11.47	74.00	14.70	336.52
YBL031W	*SHE1*	0.81	0.94	0.94	1.27	1.58	1.79	45.11	7.64	88.89	45.65	134.00	53.29	365.15
YBL032W	*HEK2*	0.93	1.17	1.27	1.64	1.84	2.00	3.93	3.27	23.85	8.59	27.78	11.86	281.39
YBL033C	*RIB1*	0.82	0.91	1.01	1.35	1.65	1.80	3.38	1.04	34.46	9.49	37.84	10.53	214.42
YBL036C	*YBL036c*	0.94	1.31	1.52	1.90	2.05	2.16	4.30	3.28	26.68	9.17	30.98	12.45	289.17
YBL037W	*APL3*	0.96	1.11	1.05	1.18	1.44	1.64	46.09	34.20	89.99	82.45	136.08	116.64	356.51
YBL038W		0.95	1.12	1.07	1.20	1.41	1.67	52.44	41.76	91.00	85.89	143.43	127.65	414.76
YBL038W	*MRPL16*	0.91	1.20	1.18	1.15	1.39	1.62	94.94	89.54	135.00	132.68	229.94	222.23	409.64
YBL038W	*MRPL16*	0.88	1.06	1.04	0.85	0.90	0.84	126.40	120.21	118.94	120.81	245.35	241.02	537.75
YBL039C	*URA7*	0.87	1.21	1.29	1.66	1.87	2.02	1.39	0.97	25.99	3.45	27.38	4.42	260.51
YBL039C		0.94	1.31	1.43	1.78	1.95	2.10	18.77	10.65	63.10	50.54	81.86	61.19	358.75
YBL039C	*URA7*	0.90	1.09	1.15	1.39	1.65	1.85	4.01	2.27	35.55	19.01	39.56	21.27	289.39
YBL039W-A	*YBL039w-a*	0.90	1.19	1.35	1.71	1.91	2.06	5.07	1.21	45.43	16.22	50.50	17.42	288.85

ORF.name	Strain	Optical density at 600 nm at regular intervals (h)						GLUCOSE		FRUCTOSE		TOTAL SUGARS (g/l)		TOTAL AMINO ACIDS (mg/L)
		0	26	33	48	59	78	102 h	118 h	102 h	118 h	102 h	118 h	102 h
YBL042C	FUI1	0.96	1.32	1.51	1.92	2.07	2.21	12.49	7.29	51.23	40.15	63.72	47.44	339.41
YBL043W	ECM13	0.94	1.34	1.50	2.22	2.35	2.40	10.95	6.06	49.93	34.75	60.88	40.81	327.60
YBL044W		0.96	1.13	1.11	1.16	1.26	1.43	78.69	59.18	114.07	104.90	192.76	164.08	458.53
YBL044W	YBL044w	0.91	1.31	1.25	1.00	1.02	0.97	136.13	126.45	147.88	135.38	284.01	261.83	527.07
YBL044W	YBL044w	0.87	1.04	1.01	0.87	0.87	0.82	124.70	132.69	130.49	128.14	255.19	260.83	521.15
YBL045C	COR1	0.89	1.27	1.30	1.54	1.79	1.94	9.04	3.29	58.69	34.36	67.74	37.65	260.00
YBL045C	COR1	0.92	1.06	1.03	0.88	0.91	0.83	126.55	124.42	129.16	121.12	255.70	245.54	524.53
YBL046W	PSY4	0.88	1.14	1.26	1.60	1.76	1.90	9.09	3.22	46.94	8.17	56.02	11.39	318.96
YBL047C	EDE1	0.88	1.12	1.23	1.55	1.71	1.86	8.14	3.53	46.62	20.17	54.76	23.70	292.18
YBL048W	YBL048w	1.00	1.36	1.57	1.96	2.12	2.23	5.88	3.22	36.40	12.40	42.29	15.62	302.63
YBL049W	MOH1	0.92	1.23	1.40	1.76	1.92	2.04	3.98	3.09	24.17	7.95	28.15	11.04	282.35
YBL051C	PIN4	0.89	1.06	1.02	1.25	1.45	1.67	12.50	6.87	58.38	43.90	70.88	50.77	331.39
YBL052C	SAS3	0.92	1.27	1.41	1.82	1.98	2.11	4.86	3.48	30.72	17.24	35.57	20.72	300.38
YBL053W	YBL053w	0.86	1.17	1.26	1.64	1.81	1.97	12.50	5.47	50.95	32.48	63.45	37.95	337.78
YBL054W	TOD6	0.83	1.10	1.17	1.51	1.67	1.84	12.72	5.94	53.81	35.98	66.53	41.92	340.02
YBL055C	YBL055c	0.92	1.23	1.37	1.77	1.94	2.10	10.72	5.47	50.18	34.05	60.90	39.52	323.62
YBL056W	PTC3	0.88	1.14	1.22	1.53	1.71	1.88	11.83	5.30	53.29	31.36	65.12	36.66	323.97
YBL057C	PTH2	0.86	1.12	1.20	1.53	1.70	1.85	8.26	5.33	43.99	32.80	52.25	38.12	320.34
YBL058W	SHP1	0.83	1.09	1.07	1.00	1.12	1.35	61.95	36.08	107.64	82.09	169.59	118.17	347.39
YBL059W	YBL059w	0.88	1.22	1.40	1.78	1.94	2.08	19.35	3.23	67.46	6.71	86.81	9.94	312.28
YBL060W	YEL1	0.83	1.05	1.16	1.51	1.70	1.86	8.16	3.24	41.74	10.15	49.90	13.39	304.63
YBL061C	SKT5	0.95	1.21	1.36	1.77	1.96	2.11	3.75	3.17	22.26	8.93	26.01	12.10	279.96
YBL062W	YBL062w	0.91	1.17	1.29	1.68	1.87	2.02	4.83	3.25	31.52	13.43	36.35	16.68	287.33
YBL063W	KIP1	0.89	1.04	0.98	1.01	1.11	1.20	30.94	28.76	75.90	74.61	106.84	103.37	335.37
YBL064C	PRX1	0.93	1.20	1.26	1.69	1.88	2.04	22.11	8.46	67.38	45.36	89.50	53.82	336.93
YBL065W	YBL065w	0.89	1.20	1.28	1.62	1.79	1.97	11.32	6.01	50.43	37.31	61.76	43.32	324.97
YBL066C	SEF1	0.88	1.17	1.26	1.63	1.82	2.00	12.78	3.94	53.62	24.71	66.40	28.65	327.93
YBL067C	UBP13	0.90	1.15	1.26	1.63	1.78	1.94	18.98	9.41	61.62	43.85	80.60	53.26	343.42
YBL068W	PRS4	0.89	1.15	1.22	1.56	1.74	1.93	9.18	7.64	49.27	41.36	58.45	49.00	314.05
YBL069W	AST1	0.92	1.24	1.34	1.72	1.89	2.06	6.71	3.63	39.73	19.87	46.44	23.50	303.34
YBL070C	YBL070c	0.85	1.08	1.14	1.43	1.61	1.79	6.49	4.53	37.83	26.15	44.32	30.68	308.90
YBL071C	YBL071c	0.90	1.20	1.41	1.83	1.99	2.13	6.99	3.52	41.08	18.14	48.08	21.66	301.45
YBL071C-B	YBL071c-b	0.90	1.18	1.29	1.70	1.92	2.11	13.95	6.84	67.95	38.96	81.89	45.79	317.64
YBL071W-A	KTI11	0.89	1.11	1.16	1.48	1.73	1.93	24.10	16.99	79.82	55.70	103.92	72.70	309.22
YBL072C	RPS8a	0.90	1.32	1.43	1.77	2.05	2.22	2.25	1.41	30.07	11.00	32.32	12.41	281.07
YBL072C	RPS8a	0.83	1.16	1.21	1.51	1.78	2.00	12.17	2.49	57.07	23.78	69.24	26.26	312.04
YBL075C	SSA3	0.92	1.19	1.35	1.74	1.91	2.08	4.67	3.11	29.54	9.06	34.22	12.17	289.10
YBL078C	ATG8	0.89	1.15	1.27	1.67	1.83	1.98	13.06	7.42	55.15	42.85	68.21	50.27	286.54
YBL079W	NUP170	0.94	1.10	1.08	1.39	1.70	1.93	18.44	20.75	66.01	69.63	84.45	90.38	321.04
YBL079W	NUP170	0.89	1.24	1.29	1.56	1.84	2.06	19.60	7.22	75.40	52.90	95.00	60.13	309.78
YBL080C		0.94	1.32	1.48	1.91	2.06	2.16	8.25	6.07	46.58	37.93	54.84	44.00	293.80
YBL080C	PET112	0.89	1.23	1.20	1.02	1.01	0.96	125.29	132.58	143.88	143.73	269.17	276.31	534.44
YBL080C	PET112	0.86	1.05	1.01	0.86	0.89	0.81	125.21	122.78	126.77	120.07	251.99	242.85	539.53
YBL081W	YBL081w	0.94	1.29	1.42	1.79	1.96	2.11	7.89	4.93	44.67	31.85	52.55	36.78	309.92
YBL082C	ALG3	0.94	1.24	1.33	1.60	1.74	1.90	11.65	4.60	46.13	28.61	57.78	33.21	319.25
YBL083C	YBL083c	0.94	1.20	1.27	1.51	1.64	1.80	8.40	5.82	43.70	32.48	52.10	38.30	308.58
YBL085W	BOI1	0.97	1.33	1.47	1.81	1.98	2.12	9.76	6.78	48.45	39.15	58.21	45.93	321.78
YBL086C	YBL086c	0.96	1.32	1.50	1.89	2.05	2.18	9.94	5.75	48.17	34.07	58.11	39.82	319.28
YBL087C	RPL23a	0.89	1.12	1.19	1.52	1.71	1.91	5.15	3.28	32.61	13.25	37.76	16.52	288.31
YBL088C	TEL1	0.96	1.28	1.44	1.79	1.95	2.10	8.09	4.86	43.92	31.09	52.02	35.96	305.13
YBL089W	AVT5	0.87	1.14	1.28	1.62	1.77	1.93	5.17	3.18	33.23	8.96	38.40	12.13	290.05
YBL090W	MRP21	0.89	1.19	1.16	1.01	1.01	1.00	129.97	127.87	147.05	140.58	277.02	268.45	531.40
YBL090W	MRP21	0.86	1.08	1.03	0.85	0.88	0.83	121.69	121.22	126.62	121.45	248.31	242.67	539.93
YBL091C	MAP2	0.96	1.29	1.45	1.83	1.99	2.14	12.57	6.63	53.94	38.50	66.51	45.13	294.80
YBL091C-A	SCS22	0.95	1.40	1.58	1.99	2.16	2.24	3.59	1.49	39.92	22.14	43.51	23.63	250.91
YBL091C-A	SCS22	0.93	1.25	1.41	1.77	1.95	2.12	8.73	1.74	55.22	18.09	63.95	19.83	297.64
YBL093C	ROX3	0.92	1.16	1.26	1.56	1.79	1.99	1.22	0.85	8.73	0.76	9.96	1.61	254.69
YBL094C	YBL094c	0.90	1.22	1.33	1.68	1.84	2.02	6.23	5.50	32.13	34.44	38.36	39.94	305.03
YBL095W	YBL095w	0.95	1.31	1.54	1.97	2.15	2.27	19.86	12.52	74.09	64.90	93.95	77.43	287.93
YBL096C	YBL096c	1.00	1.42	1.67	2.06	2.23	2.33	8.35	6.40	51.82	47.41	60.18	53.81	300.27
YBL098W	BNA4	0.95	1.34	1.51	1.85	2.03	2.14	17.84	4.57	73.58	42.51	91.42	47.08	336.56
YBL099W	ATP1	0.95	1.46	1.67	2.05	2.22	2.34	1.98	1.69	25.52	17.02	27.50	18.71	274.25
YBL100C	YBL100c	0.91	1.35	1.52	1.87	2.06	2.19	4.76	2.27	41.08	24.37	45.83	26.63	308.42
YBL101C	ECM21	0.97	1.35	1.53	1.86	2.03	2.15	10.06	1.76	61.29	27.15	71.35	28.91	198.19
YBL101W-C	YBL101w-c	0.92	1.27	1.47	1.87	2.05	2.17	6.42	5.46	48.93	34.98	55.35	40.44	280.04
YBL102W	SFT2	0.92	1.26	1.45	1.82	2.00	2.13	18.62	1.57	74.34	25.49	92.96	27.05	197.50
YBL103C	RTG3	0.92	1.22	1.39	1.80	2.01	2.13	19.15	7.85	69.80	56.41	88.94	64.26	179.47
YBL103C	RTG3	0.91	1.25	1.38	1.84	2.03	2.16	3.59	1.14	36.52	14.67	40.10	15.80	296.23
YBL104C	YBL104c	0.87	1.16	1.33	1.66	1.84	2.00	27.27	13.41	79.64	59.32	106.91	72.72	209.26
YBL104C	YBL104c	0.92	1.23	1.40	1.74	1.90	2.04	10.40	2.23	56.51	21.97	66.91	24.20	303.08
YBL107C	YBL107c	0.99	1.37	1.54	1.86	2.07	2.18	25.67	13.51	79.18	63.38	104.84	76.89	321.50
YBR001C	NTH2	0.94	1.34	1.59	2.00	2.17	2.29	25.01	12.14	83.65	62.29	108.66	74.43	357.83
YBR003W	COQ1	0.89	1.19	1.38	1.79	1.98	2.10	14.15	1.38	67.35	24.75	81.50	26.12	324.11
YBR005W	RCR1	1.00	1.46	1.65	1.98	2.13	2.23	13.06	7.14	65.73	48.50	78.79	55.63	331.81
YBR006W	UGA2	0.86	1.18	1.31	1.67	1.87	2.05	9.62	4.92	54.32	36.90	63.94	41.81	302.04
YBR007C	DSF2	0.93	1.30	1.48	1.86	2.04	2.19	11.23	2.17	54.59	22.33	65.83	24.49	307.00
YBR008C	FLR1	0.89	1.16	1.26	1.60	1.78	1.97	8.21	1.50	49.67	16.28	57.88	17.78	298.36
YBR009C	HHF1	0.84	1.08	1.14	1.41	1.69	1.91	4.85	1.66	36.86	12.72	41.71	14.38	290.17
YBR010W	HHT1	0.92	1.33	1.48	1.88	2.08	2.21	15.07	8.88	62.58	47.98	77.66	56.85	316.83
YBR012C	YBR012c	1.00	1.28	1.47	1.88	2.13	2.40	9.09	6.67	51.90	44.62	60.99	51.29	300.72
YBR013C	YBR013c	0.84	1.22	1.39	1.75	1.95	2.09	5.50	3.21	42.70	27.77	48.20	30.98	280.53
YBR014C	GRX7	0.87	1.05	1.18	1.49	1.70	1.85	10.31	3.84	54.73	37.53	65.04	41.37	165.95
YBR015C	MNN2	0.87	1.09	1.24	1.51	1.71	1.87	11.43	6.71	58.68	46.79	70.11	53.50	111.95
YBR016W	YBR016w	0.88	1.13	1.30	1.61	1.82	1.98	5.36	2.80	44.97	32.69	50.33	35.49	123.69
YBR018C	GAL7	0.90	1.18	1.39	1.75	1.93	2.07	14.57	5.26	63.15	43.42	77.72	48.67	152.11
YBR019C	GAL10	0.91	1.23	1.42	1.75	1.94	2.07	6.11	1.18	45.41	20.90	51.51	22.08	128.07
YBR020W	GAL1	0.90	1.19	1.37	1.67	1.83	1.98	13.48	2.60	60.75	33.05	74.24	35.65	114.81
YBR020W	GAL1	0.93	1.14	1.32	1.69	1.93	2.06	1.50	0.99	23.74	11.69	25.24	12.68	276.17
YBR021W	FUR4	0.88	1.25	1.39	1.75	1.73	1.88	2.46	1.53	33.61	22.96	36.07	24.49	126.57
YBR022W	POA1	0.90	1.22	1.41	1.77	1.96	2.10	13.51	0.34	60.46	12.42	73.97	12.77	129.59
YBR023C	CHS3	0.89	1.16	1.29	1.65	1.85	2.01	16.31	4.01	62.80	37.73	79.11	41.74	124.86
YBR024W	SCO2	0.93	1.26	1.45	1.84	2.01	2.14	18.97	6.95	67.54	47.56	86.51	54.52	134.82
YBR025C	OLA1	0.87	1.13	1.25	1.65	1.87	2.06	19.22	4.39	65.82	39.07	85.04	43.46	127.56
YBR026C	ETR1	0.92	1.18	1.31	1.79	2.01	2.13	5.26	1.68	44.56	28.79	49.82	30.46	137.20
YBR027C	YBR027c	0.93	1.15	1.30	1.62	1.83	2.01	9.77	4.06	55.21	38.10	64.98	42.15	230.75
YBR028C	YBR028c	0.92	1.19	1.38	1.71	1.89	2.06	9.22	5.46	55.00	44.47	64.21	49.94	236.09
YBR030W	RKM3	0.92	1.21	1.42	1.73	1.89	2.03	10.83	3.93	57.81	37.52	68.64	41.45	192.00
YBR031W	RPL4a	0.90	1.19	1.39	1.77	1.97	2.12	7.66	1.75	50.71	25.53	58.37	27.28	155.46
YBR032W	YBR032w	0.92	1.34	1.59	1.94	2.07	2.22	4.33	1.28	38.86	16.91	43.19	18.19	145.78
YBR033W	EDS1	0.90	1.23	1.43	1.80	1.98	2.13	13.20	3.12	59.78	32.86	72.98	35.99	164.96
YBR034C	HMT1	0.97	1.16	1.19	1.08	1.09	1.04	132.24	129.22	135.09	132.21	267.32	261.43	210.74
YBR035C	PDX3	0.88	1.06	1.09	0.92	1.03	1.19	58.82	41.16	115.37	79.76	174.19	120.92	389.25
YBR036C	CSG2	0.96	1.31	1.51	1.85	1.96	2.08	20.29	12.12	69.40	57.34	89.69	69.46	209.97
YBR037C	SCO1	1.07	1.39	1.63	2.16	2.13	2.17	1.25	2.29	16.26	24.64	17.51	26.93	274.27
YBR040W	FIG1	0.93	1.27	1.47	1.88	2.07	2.20	8.57	3.90	54.14	38.18	62.71	42.08	229.79
YBR041W	FAT1	0.88	1.15	1.30	1.71	1.93	2.06	9.84	5.37	53.38	43.91	63.22	49.28	237.75
YBR042C	CST26	0.90	1.18	1.33	1.75	1.96	2.06	17.17	6.98	65.48	47.94	82.65	54.93	241.10
YBR043C	QDR3	0.93	1.23	1.44	1.78	1.96	2.10	17.46	8.17	66.33	49.36	83.79	57.53	239.55
YBR044C	TCM62	0.88	1.17	1.37	1.69	1.87	2.03	6.06	1.93	44.78	26.25	50.84	28.18	246.23
YBR045C	GIP1	0.89	1.20	1.40	1.71	1.91	2.05	9.07	2.45	55.08	30.95	64.15	33.40	258.62
YBR046C	ZTA1	0.95	1.34	1.60	1.93	2.08	2.18	3.47	1.29	35.71	19.08	39.18	20.37	187.17
YBR047W	FMP23	0.92	1.28	1.48	1.85	2.02	2.14	11.91	2.21	58.44	27.84	70.35	30.05	222.95
YBR048W	RPS11b	0.88	1.15	1.23	1.53	1.78	1.98	13.10	2.62	59.51	32.38	72.62	35.00	206.22
YBR050C	REG2	0.92	1.33	1.59	1.98	2.13	2.25	4.28	0.99	38.20	10.12	42.48	11.12	224.63
YBR051W	YBR051w	0.93	1.30	1.53	1.92	2.08	2.20	16.50	4.85	61.97	39.71	78.46	44.56	195.39
YBR052C	RFS1	0.97	1.39	1.66	2.04	2.19	2.29	13.82	18.10	59.77	63.86	73.59	81.95	217.00
YBR053C	YBR053c	0.98	1.35	1.52	1.92	2.10	2.23	13.60	7.17	61.30	47.14	74.91	54.31	232.48
YBR054W	YRO2	0.89	1.22	1.40	1.77	1.96	2.08	8.47	2.76	52.11	32.12	60.58	34.88	238.20
YBR056W	YBR056w	0.90	1.21	1.35	1.77	1.96	2.08	15.58	4.70	64.87	44.19	80.45	48.89	235.78
YBR056W-A	YBR056w-a	0.87	1.13	1.33	1.73	1.95	2.05	7.72	2.47	53.76	27.72	61.48	30.19	303.23
YBR057C	MUM2	0.98	1.34	1.60	1.96	2.15	2.13	7.81	3.32	50.48	35.22	58.29	38.54	281.39
YBR058C	UBP14	0.87	1.14	1.32	1.68	1.86	2.01	2.47	0.90	40.16	15.84	42.63	16.74	286.24
YBR059C	AKL1	0.86	1.11	1.25	1.55	1.76	1.90	10.76	4.44	56.86	38.76	67.62	43.20	247.66
YBR061C	TRM7	0.92	1.20	1.31	1.64	1.87	2.05	23.53	12.38	78.01	62.42	101.53	74.79	267.41
YBR062C	YBR062c	0.89	1.23	1.42	1.77	1.93	2.09	8.37	2.20	51.08	27.80	59.45	30.00	281.63
YBR062C	YBR062c	0.93	1.28	1.41	1.84	2.13	2.20	7.53	0.91	50.53	7.65	58.06	8.56	286.13
YBR063C	YBR063c	0.93	1.31	1.51	1.83	1.99	2.11	10.82	1.75	55.79	23.69	66.61	25.44	316.35
YBR064W	YBR064w	0.90	1.28	1.48	1.79	1.97	2.11	7.38	1.53	48.14	21.48	55.52	23.01	282.63
YBR065C	ECM2	0.90	1.22	1.39	1.77	1.96	2.10	12.53	4.88	60.29	40.92	72.82	45.80	272.16
YBR066C	NRG2	0.89	1.24	1.42	1.88	2.09	2.21	9.96	5.06	51.44	37.41	61.41	42.46	275.82
YBR067C	TIP1	0.87	1.22	1.39	1.74	1.94	2.08	8.40	3.30	50.36	35.53	58.75	38.83	277.79
YBR068C	BAP2	0.91	1.18	1.30	1.71	1.92	2.06	12.41	3.72	60.05	38.44	72.46	42.16	285.50
YBR069C	TAT1	0.97	1.28	1.48	1.78	1.90	2.07	15.34	6.51	59.98	43.44	75.31	49.96	277.64
YBR071W	YBR071w	0.84	1.09	1.23	1.50	1.69	1.84	5.40	2.99	44.62	33.09	50.02	36.08	205.03

ORF.name	Strain	Optical density at 600 nm at regular intervals (h)						GLUCOSE		FRUCTOSE		TOTAL SUGARS (g/l)		TOTAL AMINO ACIDS (mg/L)
		0	26	33	48	59	78	102 h	118 h	102 h	118 h	102 h	118 h	102 h
YBR072C-A	YBR072c-a	0.94	1.25	1.41	2.01	2.00	2.11	14.58	8.23	65.98	39.76	80.57	47.99	325.47
YBR072W	HSP26	0.86	1.14	1.30	1.57	1.77	1.92	5.81	2.63	44.28	29.66	50.09	32.29	247.24
YBR073W	RDH54	0.93	1.29	1.50	1.85	2.01	2.15	10.55	2.53	57.21	31.74	67.76	34.27	283.50
YBR074W	YBR074w	0.85	1.19	1.39	1.78	1.97	2.09	10.34	2.36	56.00	30.17	66.34	32.53	274.49
YBR074W	YBR074w	0.93	1.27	1.45	1.82	1.98	2.13	8.29	2.00	51.51	20.25	59.80	22.25	298.42
YBR075W	YBR075w	0.92	1.26	1.41	1.75	1.94	2.08	6.92	2.10	48.27	27.48	55.19	29.57	298.99
YBR075W	YBR075w	0.99	1.20	1.37	1.79	2.00	2.12	11.29	0.96	51.94	10.76	63.23	11.72	324.75
YBR076W	ECM8	0.90	1.25	1.44	1.78	2.12	2.09	10.16	2.00	54.67	27.59	64.83	29.59	306.16
YBR077C	SLM4	0.89	1.21	1.33	1.55	1.73	1.87	50.40	45.06	94.27	99.32	144.68	144.38	214.35
YBR078W	ECM33	0.92	1.16	1.38	1.80	2.01	2.18	1.11	0.74	9.19	1.62	10.30	2.36	239.21
YBR081C	SPT7	0.94	1.01	1.04	1.07	1.24	1.34	75.34	61.81	113.12	104.40	188.46	166.21	422.00
YBR081C	SPT7	0.87	1.05	1.06	1.02	1.16	1.34	58.90	43.03	112.82	94.88	171.73	137.92	400.30
YBR082C	UBC4	0.92	1.05	1.16	1.46	1.73	1.94	25.69	9.83	79.87	57.50	105.56	67.33	308.36
YBR083W	TEC1	0.90	1.12	1.32	1.75	1.93	2.13	0.77	0.66	9.49	2.32	10.26	2.98	280.48
YBR084C-A	RPL19a	0.93	1.10	1.26	1.76	2.03	2.27	1.42	0.63	25.51	6.54	26.93	7.17	211.82
YBR084W	MIS1	0.93	1.20	1.43	1.88	2.05	2.19	1.15	0.66	20.97	5.17	22.12	5.83	281.70
YBR085C-A	YBR085c-a	0.94	1.24	1.40	1.75	1.96	2.07	2.07	0.85	24.42	7.17	26.49	8.02	314.59
YBR085W	AAC3	0.92	1.10	1.35	2.01	2.01	2.05	4.64	0.85	38.97	12.18	43.61	13.03	289.10
YBR090C	YBR090c	0.94	1.17	1.38	1.92	2.11	2.26	1.93	0.65	28.45	8.37	30.38	9.03	294.44
YBR090C-A	YBR090C-A	0.97	1.21	1.45	1.89	2.08	2.22	2.93	0.62	35.35	4.96	38.28	5.58	300.77
YBR092C	PHO3	0.96	1.22	1.49	1.94	2.11	2.25	3.90	0.64	39.69	7.73	43.59	8.36	304.21
YBR093C	PHO5	0.92	1.10	1.31	1.82	2.02	2.18	10.57	1.81	56.76	26.39	67.33	28.20	313.54
YBR094W	PBY1	0.86	0.99	1.16	1.57	1.77	1.94	8.26	1.37	53.64	24.60	61.91	25.97	327.40
YBR095C	RXT2	0.91	1.22	1.47	1.84	2.00	2.12	7.84	1.86	57.11	35.83	64.96	37.68	301.19
YBR097W	VPS15	0.93	1.04	1.09	1.13	1.32	1.47	43.48	38.41	118.82	84.91	162.30	123.31	375.18
YBR098W	MMS4	0.97	1.20	1.42	1.86	2.06	2.20	6.25	1.90	47.03	28.69	53.28	30.58	316.61
YBR098W	MMS4	0.89	1.24	1.37	1.77	1.95	2.11	13.89	2.26	66.13	23.79	80.02	26.06	318.83
YBR099C	YBR099c	0.97	1.24	1.49	1.92	2.12	2.26	1.34	0.78	25.09	8.61	26.43	9.39	291.31
YBR100W	YBR100W	0.96	1.25	1.51	1.95	2.16	2.31	0.74	0.73	9.69	2.11	10.43	2.84	293.95
YBR100W	YBR100W	0.90	1.04	1.21	1.71	1.93	2.14	1.39	0.77	25.37	11.70	26.76	12.47	301.30
YBR101C	FES1	0.85	1.08	1.08	1.14	1.32	1.51	47.34	34.85	94.28	83.27	141.62	118.12	339.36
YBR103W	SIF2	1.01	1.20	1.38	1.81	2.04	2.22	12.09	2.47	56.51	29.72	68.59	32.19	300.63
YBR104W	YMC2	0.88	1.08	1.27	1.68	1.91	2.09	3.48	0.79	37.59	9.09	41.07	9.88	307.04
YBR105C	VID24	0.94	1.16	1.38	1.80	1.96	2.10	4.77	1.27	42.60	21.61	47.37	22.88	303.48
YBR105C	VID24	0.95	1.35	1.48	1.91	2.09	2.22	5.93	0.97	46.85	9.62	52.78	10.59	278.95
YBR106W	PHO88	0.97	1.23	1.48	1.89	2.08	2.16	32.47	23.82	80.26	71.83	112.73	95.64	378.03
YBR107C	IML3	1.03	1.23	1.43	1.94	2.13	2.27	17.14	1.70	70.18	29.07	87.32	30.77	325.13
YBR108W	AIM3	0.96	1.18	1.39	1.82	2.02	2.17	3.32	0.81	37.15	9.23	40.47	10.05	297.04
YBR111C	YSA1	0.97	1.26	1.52	1.97	2.16	2.28	1.35	0.68	22.23	4.92	23.58	5.60	284.09
YBR111W-A	SUS1	0.95	1.20	1.31	1.64	1.89	2.06	21.86	8.02	78.08	40.57	99.94	48.59	329.17
YBR112C	CYC8	0.89	1.10	1.05	0.96	1.03	1.13	65.57	46.73	120.64	84.23	186.21	130.96	404.70
YBR113W	YBR113w	0.98	1.28	1.54	1.96	2.13	2.24	3.06	0.86	35.14	13.28	38.20	14.15	295.62
YBR114W	RAD16	0.98	1.33	1.60	2.05	2.23	2.36	0.75	0.71	3.08	1.50	3.83	2.21	265.39
YBR115C	LYS2	0.94	1.13	1.34	1.77	2.00	2.14	7.55	2.33	48.40	29.59	55.95	31.93	319.14
YBR116C	YBR116c	1.02	1.31	1.57	1.97	2.17	2.29	5.53	1.46	46.55	25.19	52.08	26.65	304.45
YBR119W	MUD1	1.00	1.25	1.50	1.93	2.11	2.24	2.41	0.96	32.48	8.80	34.89	9.76	293.74
YBR120C	CBP6	0.92	1.07	1.24	1.55	1.78	1.99	0.74	0.77	3.62	1.17	4.36	1.94	284.42
YBR121C	GRS1	0.91	1.11	1.30	1.76	1.97	2.13	12.41	6.13	59.51	45.45	71.92	51.57	305.73
YBR122C	MRPL36	0.87	0.96	0.97	0.86	0.87	0.83	127.93	123.13	141.34	112.23	269.27	235.36	306.22
YBR122C	MRPL36	0.93	1.14	1.12	1.01	1.01	1.00	119.19	116.26	131.46	97.18	250.65	213.64	491.27
YBR125C	PTC4	0.91	1.11	1.35	1.90	2.08	2.23	12.17	1.69	58.60	27.79	70.77	29.48	318.66
YBR126C	TPS1	0.93	1.28	1.44	1.79	2.04	2.24	0.67	0.72	5.09	9.33	5.76	10.06	296.15
YBR127C	VMA2	0.85	1.03	1.02	0.93	1.15	1.43	42.28	19.79	92.08	74.20	134.37	93.98	344.72
YBR128C	ATG14	0.92	1.14	1.30	1.76	2.00	2.18	19.84	11.06	76.07	57.85	95.92	68.91	285.96
YBR129C	OPY1	0.93	1.22	1.43	1.84	2.04	2.20	6.75	1.72	51.49	24.41	58.24	26.14	294.09
YBR130C	SHE3	0.85	1.11	1.29	1.70	1.91	2.05	20.47	6.42	71.94	47.51	92.41	53.92	318.27
YBR131W	CCZ1	0.84	0.88	0.95	1.28	1.48	1.64	36.09	16.65	88.46	74.07	124.55	90.72	327.92
YBR132C	AGP2	0.90	1.07	1.11	1.45	1.77	1.93	19.40	13.85	72.41	60.53	91.81	74.37	283.13
YBR133C	HSL7	0.92	1.20	1.39	1.82	2.03	2.15	4.54	2.06	41.17	25.27	45.71	27.33	262.12
YBR133C	HSL7	0.87	1.13	1.20	1.40	1.68	1.80	18.45	4.02	67.92	33.91	86.37	37.93	315.04
YBR134W	YBR134w	0.91	1.14	1.32	1.77	1.99	2.13	8.70	5.04	58.38	42.10	67.08	47.14	292.59
YBR137W	YBR137w	0.89	1.16	1.35	1.80	1.97	2.14	6.35	13.31	47.56	60.54	53.91	73.85	296.15
YBR138C	YBR138c	0.88	1.13	1.33	1.74	1.93	2.10	3.47	1.84	36.41	25.02	39.88	26.86	286.27
YBR139W	YBR139w	0.90	1.15	1.33	1.76	1.99	2.11	1.37	5.91	25.67	46.18	27.04	52.10	285.80
YBR141C	YBR141c	0.87	1.13	1.34	1.77	1.98	2.06	0.63	0.80	7.73	9.28	8.36	10.08	267.15
YBR144C	YBR144c	0.90	1.08	1.22	1.64	1.86	2.05	5.13	3.09	44.09	33.57	49.23	36.66	295.99
YBR145W	ADH5	0.92	1.15	1.38	1.82	2.01	2.17	8.29	2.48	55.87	29.21	64.17	31.69	300.54
YBR146W	MRPS9	0.93	1.13	1.34	1.80	2.00	2.18	9.05	3.58	56.24	35.54	65.29	39.12	297.54
YBR147W	RTC2	0.91	1.12	1.34	1.79	1.96	2.12	13.37	7.76	69.01	52.39	82.38	60.15	274.49
YBR148W	YSW1	0.88	1.10	1.29	1.70	1.89	2.04	10.17	3.18	58.81	34.30	68.98	37.48	298.82
YBR149W	ARA1	0.91	1.12	1.31	1.72	1.91	2.05	8.17	5.17	56.20	41.62	64.37	46.79	287.67
YBR150C	TBS1	1.04	1.20	1.36	1.82	2.05	2.21	26.94	3.43	76.43	36.48	103.37	39.91	354.81
YBR151W	APD1	0.91	1.13	1.32	1.74	1.99	2.17	0.88	1.10	2.41	0.81	3.28	1.92	259.72
YBR156C	SLI15	0.91	1.14	1.35	1.80	1.99	2.12	6.37	7.85	49.17	49.31	55.54	57.16	300.51
YBR157C	ICS2	0.92	1.12	1.31	1.80	2.01	2.18	3.16	1.71	34.63	22.57	37.79	24.28	284.18
YBR157C	ICS2	0.91	1.26	1.44	1.85	2.03	2.19	2.71	1.06	36.68	12.18	39.39	13.24	267.92
YBR158W	AMN1	0.88	1.05	1.21	1.65	1.84	2.04	5.34	3.32	49.03	34.63	54.37	37.95	296.32
YBR159W	IFA38	0.88	1.06	1.25	1.73	1.92	2.08	1.78	1.94	25.90	24.68	27.68	26.62	281.60
YBR161W	CSH1	0.90	1.11	1.30	1.79	1.98	2.07	1.94	2.05	29.63	28.22	31.58	30.27	282.36
YBR162C	TOS1	0.91	1.09	1.23	1.63	1.86	2.05	10.12	5.20	59.48	43.83	69.60	49.02	312.74
YBR162W-A	YSY6	0.89	1.06	1.24	1.67	1.90	2.09	3.39	1.09	37.17	15.88	40.56	16.97	295.97
YBR162W-A	YSY6	0.90	1.18	1.30	1.70	1.89	1.98	7.57	1.90	49.63	24.19	57.20	26.09	279.90
YBR163W	EXO5	0.92	1.10	1.08	0.92	0.94	0.91	119.42	121.58	126.13	116.13	249.55	237.71	540.18
YBR164C	ARL1	0.97	1.22	1.44	1.87	2.05	2.19	5.16	3.21	46.52	36.22	51.68	39.43	305.33
YBR165W	UBS1	0.90	1.11	1.32	1.75	1.95	2.09	3.52	2.41	39.48	28.69	43.00	31.09	281.42
YBR166C	TYR1	0.89	1.09	1.28	1.72	1.91	2.06	3.10	2.29	36.18	27.97	39.28	30.26	290.51
YBR168W	PEX32	0.98	1.12	1.25	1.72	1.94	2.13	20.09	5.98	70.14	45.31	90.22	51.29	337.13
YBR169C	SSE2	0.98	1.22	1.40	1.83	2.01	2.19	16.73	4.89	65.37	42.10	82.10	46.99	318.18
YBR170C	NPL4	0.92	1.14	1.36	1.77	1.97	2.08	5.02	5.20	44.42	43.63	49.44	48.83	296.29
YBR171W	SEC66	0.96	1.19	1.40	1.82	2.00	2.14	1.19	2.77	18.81	25.27	20.00	28.04	282.33
YBR172C	SMY2	0.89	1.09	1.29	1.77	1.99	2.14	2.00	1.70	28.56	22.62	30.56	24.32	277.44
YBR173C	UMP1	0.94	1.10	1.19	1.50	1.74	1.88	26.21	15.95	75.21	60.81	101.43	76.76	328.90
YBR174C	YBR174c	0.91	1.10	1.28	1.78	2.00	2.12	11.32	3.51	60.44	34.63	71.76	38.14	299.85
YBR175W	SWD3	0.91	1.10	1.30	1.86	2.06	2.21	7.51	1.96	51.47	29.40	58.98	31.36	286.90
YBR176W	ECM31	0.89	1.12	1.34	1.86	2.04	2.19	4.12	0.85	45.75	25.34	49.87	26.19	296.72
YBR177C	EHT1	0.90	1.06	1.17	1.74	1.98	2.14	16.73	5.66	67.42	49.52	84.15	55.19	328.05
YBR178W	YBR178w	0.92	1.11	1.24	1.81	2.07	2.23	0.92	0.16	26.51	8.71	27.43	8.88	290.17
YBR179C	FZO1	0.95	1.18	1.18	1.26	1.63	1.86	26.86	12.81	77.38	57.15	104.23	69.96	290.87
YBR180W	DTR1	0.96	1.17	1.35	1.94	2.15	2.25	6.76	2.99	53.72	37.46	60.48	40.45	309.16
YBR181C	RPS6b	0.90	1.06	1.16	1.68	1.95	2.13	0.76	0.22	21.87	11.51	22.63	11.74	270.03
YBR182C	SMP1	0.95	1.13	1.29	1.75	2.01	2.15	0.78	0.36	23.67	13.41	24.44	13.77	303.31
YBR182C-A	YBR182c-a	0.97	1.31	1.51	1.91	2.07	2.18	10.93	4.43	58.16	32.33	69.09	36.76	303.19
YBR183W	YPC1	0.95	1.27	1.50	1.97	2.14	2.26	11.79	4.53	60.35	42.77	72.14	47.30	327.01
YBR184W	YBR184w	0.95	1.20	1.34	1.80	2.04	2.18	3.11	0.57	42.36	19.45	45.46	20.02	303.13
YBR185C	MBA1	0.97	1.23	1.43	1.93	2.10	2.24	19.36	6.90	68.69	46.74	88.05	53.64	340.27
YBR186W	PCH2	1.01	1.21	1.40	1.90	2.12	2.30	0.97	0.63	24.68	7.28	25.66	7.91	283.49
YBR187W	GDT1	0.95	1.13	1.32	1.90	2.08	2.23	7.87	1.73	53.90	29.14	61.77	30.87	301.77
YBR188C	NTC20	0.89	1.08	1.26	1.82	2.01	2.16	9.59	4.77	55.71	46.02	65.30	50.80	310.23
YBR189W	RPS9b	0.94	1.05	1.16	1.59	1.88	2.13	7.87	2.12	51.34	29.24	59.21	31.36	294.35
YBR191W	RPL21a	0.89	0.97	1.06	1.46	1.67	1.90	0.81	0.99	13.76	2.34	14.58	3.33	285.71
YBR194W	AIM4	0.94	1.20	1.33	1.72	1.92	2.06	23.91	10.48	78.26	55.70	102.17	66.18	333.60
YBR195C	MSI1	0.96	1.27	1.51	2.04	2.19	2.30	1.94	0.32	30.68	12.08	32.62	12.39	290.99
YBR196C-A	YBR196c-a	0.85	1.07	1.08	1.13	1.28	1.48	21.02	8.03	76.84	41.64	97.86	49.67	244.44
YBR196C-A	YBR196c-a	0.95	1.21	1.27	1.39	1.55	1.70	34.66	18.03	88.89	67.56	123.54	85.58	283.84
YBR196C-B	YBR196c-b	0.89	1.20	1.33	1.72	1.93	2.07	10.60	3.33	56.78	27.84	67.38	31.18	303.99
YBR197C	YBR197c	0.89	1.09	1.24	1.80	1.99	2.12	9.24	2.74	55.61	34.86	64.85	37.60	313.42
YBR199W	KTR4	1.00	1.18	1.30	1.80	2.04	2.22	0.02	-0.02	13.00	3.00	13.03	2.98	286.45
YBR200W	BEM1	0.91	1.03	1.08	1.55	1.81	1.99	17.60	7.21	70.19	48.93	87.79	56.14	295.45
YBR200W-A	YBR200w-a	0.89	1.45	1.53	1.84	2.04	2.15	10.85	3.98	60.39	28.86	71.24	32.84	307.52
YBR201W	DER1	0.93	1.18	1.36	1.84	1.91	2.06	0.01	-0.02	8.70	2.75	8.71	2.73	276.98
YBR201W	DER1	0.91	1.24	1.43	1.82	1.99	2.13	9.98	2.10	56.31	20.21	66.29	22.31	304.11
YBR203W	COS111	0.91	1.15	1.29	1.82	2.01	2.14	7.68	2.15	54.91	34.60	62.58	36.75	311.87
YBR204C	YBR204c	0.94	1.20	1.43	1.95	2.12	2.24	15.94	3.22	69.74	39.35	85.67	42.57	323.00
YBR205W	KTR3	0.93	1.16	1.33	1.78	2.01	2.16	12.08	0.89	61.34	22.56	73.42	23.45	323.55
YBR206W	YBR206w	1.00	1.22	1.39	1.91	2.11	2.26	12.70	2.32	62.72	36.58	75.42	38.89	318.66
YBR207W	FTH1	0.93	1.09	1.23	1.77	1.98	2.13	12.17	2.39	60.05	36.53	72.22	38.93	319.61
YBR208C	DUR1,2	0.93	1.13	1.31	2.18	2.12	2.02	8.62	1.94	55.79	31.48	64.41	33.43	295.59
YBR209W	YBR209w	0.89	1.13	1.25	1.57	1.82	2.00	1.54	1.32	15.03	3.85	16.58	5.17	291.26
YBR210W	ERV15	0.91	1.14	1.32	1.86	2.07	2.19	11.68	2.60	60.20	34.24	71.88	36.84	329.47
YBR212W	NGR1	0.91	1.28	1.49	1.84	2.03	2.16	2.26	1.60	25.45	12.49	27.71	14.09	260.79
YBR213W	MET8	1.01	1.44	1.72	2.22	2.50	2.54	0.12	0.15	6.42	1.63	6.53	1.77	284.54
YBR214W	SDS24	0.94	1.19	1.38	1.86	2.07	2.21	0.15	0.07	9.02	3.38	9.17	3.44	295.25
YBR215W	HPC2	0.93	1.21	1.37	1.89	2.11	2.27	0.16	0.12	4.15	0.99	4.32	1.11	286.66
YBR216C	YBP1	0.96	1.23	1.46	1.95	2.14	2.24	9.96	3.05	62.48	37.11	72.44	40.16	320.46

ORF.name	Strain	Optical density at 600 nm at regular intervals (h)						GLUCOSE		FRUCTOSE		TOTAL SUGARS (g/l)		TOTAL AMINO ACIDS (mg/L)
		0	26	33	48	59	78	102 h	118 h	102 h	118 h	102 h	118 h	102 h
YBR217W	*ATG12*	0.98	1.24	1.45	1.95	2.12	2.23	27.27	11.64	86.74	63.49	114.01	75.12	319.86
YBR218C	*PYC2*	0.92	1.19	1.31	1.75	1.97	2.15	6.89	1.59	54.92	29.35	61.81	30.95	311.62
YBR219C	*YBR219c*	0.95	1.19	1.33	1.86	2.09	2.26	6.47	0.67	48.28	21.08	54.75	21.75	310.35
YBR220C	*YBR220c*	0.91	1.15	1.31	1.82	2.04	2.22	0.59	0.11	20.43	5.66	21.02	5.77	293.33
YBR221C	*PDB1*	0.92	1.12	1.29	1.83	2.00	2.18	0.26	0.04	11.36	2.16	11.62	2.20	287.50
YBR221W-A	*YBR221w-a*	0.90	1.37	1.56	1.95	2.13	2.24	9.22	2.42	53.66	22.57	62.88	24.98	311.60
YBR222C	*PCS60*	0.90	1.03	1.10	1.56	1.85	2.05	0.36	0.04	22.24	3.88	22.60	3.92	302.59
YBR223C	*TDP1*	0.87	1.05	1.19	1.75	1.98	2.11	4.10	1.08	47.09	16.96	51.19	18.04	311.35
YBR224W	*YBR224w*	0.88	1.14	1.34	1.87	2.08	2.22	0.39	0.05	18.66	5.92	19.05	5.97	288.17
YBR225W	*YBR225w*	0.98	1.23	1.44	2.11	2.13	2.22	19.71	15.70	71.61	68.05	91.31	83.75	337.65
YBR226C	*YBR226c*	0.94	1.19	1.33	1.78	1.99	2.14	0.05	-0.02	3.80	0.96	3.85	0.94	286.78
YBR227C	*MCX1*	0.93	1.23	1.40	1.87	2.07	2.21	0.34	0.05	16.56	4.11	16.90	4.16	290.82
YBR228W	*SLX1*	0.91	1.16	1.36	1.86	2.05	2.17	1.88	0.33	30.25	11.71	32.13	12.05	280.64
YBR229C	*ROT2*	0.93	1.15	1.33	1.83	2.01	2.15	8.56	0.78	49.02	19.13	57.58	19.91	311.82
YBR230C	*OM14*	0.92	1.19	1.38	1.91	2.08	2.23	4.13	0.36	44.76	15.29	48.89	15.64	290.80
YBR230W-A	*YBR230w-a*	0.90	1.29	1.45	1.79	1.97	2.14	3.46	0.87	39.49	9.63	42.96	10.50	279.89
YBR231C	*SWC5*	1.03	1.21	1.21	1.51	1.85	2.08	63.42	54.28	108.57	108.04	171.99	162.31	399.58
YBR232C	*YBR232c*	0.93	1.27	1.48	1.88	2.04	2.16	14.29	3.14	54.14	15.48	68.43	18.61	331.96
YBR233W	*PBP2*	0.91	1.13	1.31	1.86	2.05	2.19	8.86	0.74	52.79	21.64	61.65	22.38	315.23
YBR235W	*YBR235w*	0.92	1.12	1.32	1.90	2.07	2.22	4.53	0.13	48.47	13.19	53.01	13.31	293.43
YBR238C	*YBR238c*	0.93	1.17	1.37	1.88	2.06	2.16	19.77	9.91	71.33	60.73	91.10	70.65	341.77
YBR239C	*ERT1*	0.90	1.11	1.28	1.83	2.05	2.18	0.66	0.16	21.19	6.34	21.84	6.51	293.88
YBR240C	*THI2*	0.95	1.16	1.30	1.80	2.02	2.16	8.05	1.42	56.87	28.21	64.92	29.63	312.00
YBR241C	*YBR241c*	1.01	1.25	1.44	1.98	2.21	2.36	0.29	0.14	16.43	2.63	16.72	2.77	300.90
YBR242W	*YBR242w*	0.88	1.10	1.24	1.77	1.99	2.14	0.29	0.07	5.78	0.26	6.06	0.33	292.48
YBR244W	*GPX2*	0.98	1.26	1.48	1.98	2.15	2.26	8.18	1.00	56.09	25.13	64.27	26.12	314.21
YBR245C	*ISW1*	0.92	1.10	1.26	1.76	2.01	2.21	0.02	0.01	4.11	-0.03	4.12	-0.03	279.32
YBR246W	*RRT2*	0.94	1.11	1.21	1.67	1.89	2.11	4.67	0.47	50.45	17.58	55.12	18.06	309.04
YBR248C	*HIS7*	0.89	1.10	1.09	0.92	0.92	0.91	126.49	122.92	125.01	122.94	251.50	245.86	540.08
YBR249C	*ARO4*	0.99	1.13	1.17	1.62	1.93	2.13	30.66	15.35	84.93	66.27	115.59	81.62	353.06
YBR250W	*SPO23*	0.92	1.10	1.25	1.76	1.97	2.11	7.76	0.63	52.50	21.48	60.27	22.10	306.67
YBR251W	*MRPS5*	0.94	0.91	0.89	0.92	0.94	0.93	118.94	130.46	125.24	136.93	244.17	267.39	533.36
YBR255W	*MTC4*	0.92	1.15	1.35	1.88	2.07	2.17	5.42	2.33	43.67	28.94	49.09	31.27	324.19
YBR258C	*SHG1*	0.94	1.16	1.34	1.87	2.10	2.23	0.06	0.06	8.52	1.17	8.58	1.23	294.22
YBR259W	*YBR259w*	0.94	1.17	1.38	1.89	2.07	2.19	11.00	3.82	59.39	40.34	70.39	44.15	316.37
YBR260C	*RGD1*	0.97	1.15	1.27	1.83	2.03	2.19	10.99	3.56	54.82	42.31	65.80	45.87	319.24
YBR261C	*TAE1*	0.91	1.12	1.27	1.73	1.92	2.06	3.06	0.22	43.90	17.83	46.95	18.05	307.39
YBR262C	*AIM5*	0.93	1.14	1.31	1.83	2.04	2.20	0.95	0.05	33.75	9.95	34.70	10.00	304.78
YBR263W	*SHM1*	0.93	1.13	1.30	1.82	2.01	2.15	8.28	1.13	52.26	25.17	60.54	26.30	315.55
YBR264C	*YPT10*	0.94	1.14	1.30	1.87	2.07	2.23	1.95	0.07	34.19	8.06	36.14	8.13	293.82
YBR266C	*YBR266c*	0.95	1.07	1.10	1.59	1.87	2.09	40.58	26.43	100.19	83.70	140.77	110.13	375.88
YBR267W	*REI1*	0.99	1.07	1.06	1.23	1.51	1.81	13.90	2.74	68.72	40.99	82.62	43.73	255.64
YBR268W	*MRPL37*	0.93	0.98	0.97	0.99	1.01	1.00	121.48	144.26	124.45	136.71	245.92	280.97	536.15
YBR269C	*FMP21*	0.92	1.31	1.45	1.84	2.02	2.13	6.15	0.95	48.57	7.54	54.71	8.49	271.62
YBR270C	*BIT2*	0.90	1.06	1.22	1.62	1.81	2.00	2.88	0.66	33.75	8.12	36.64	8.78	290.97
YBR271W	*YBR271w*	0.93	1.41	1.58	1.96	2.12	2.18	23.60	1.15	75.48	16.42	99.09	17.56	282.29
YBR272C	*HSM3*	0.92	1.02	1.14	1.51	1.72	1.92	11.50	5.94	58.30	40.33	69.80	46.27	310.73
YBR273C	*UBX7*	0.89	1.33	1.51	1.90	2.06	1.92	18.42	1.09	77.36	14.58	95.78	15.67	223.23
YBR274W	*CHK1*	0.95	1.37	1.52	1.90	2.09	2.21	2.81	0.90	30.70	6.20	33.52	7.10	266.65
YBR274W	*CHK1*	0.87	1.28	1.44	1.85	2.03	2.10	20.11	0.88	73.63	11.48	93.74	12.36	235.67
YBR275C	*RIF1*	0.92	1.02	1.13	1.62	1.83	2.00	8.51	2.84	53.12	32.98	61.63	35.82	305.27
YBR276C	*PPS1*	0.95	1.12	1.30	1.78	1.98	2.16	5.94	0.85	44.28	14.00	50.22	14.85	294.72
YBR277C	*YBR277c*	0.91	1.34	1.45	1.80	2.01	2.08	21.76	6.66	73.47	48.50	95.23	55.15	251.80
YBR278W	*DPB3*	0.91	1.25	1.36	1.77	1.96	2.08	21.25	17.81	73.25	74.96	94.50	92.77	235.22
YBR279W	*PAF1*	0.91	1.06	1.24	1.61	1.83	2.01	2.72	1.02	33.19	12.49	35.91	13.51	264.83
YBR280C	*SAF1*	0.97	1.10	1.26	1.76	1.98	2.15	16.06	2.64	65.20	31.50	81.26	34.14	336.42
YBR281C	*DUG2*	0.86	1.22	1.38	1.80	1.99	2.08	15.12	7.15	70.97	54.77	86.09	61.92	200.03
YBR282W	*MRPL27*	0.90	1.13	1.17	1.47	1.66	1.81	8.22	2.41	62.17	37.48	70.39	39.89	196.00
YBR283C	*SSH1*	0.96	1.39	1.53	1.99	2.17	2.25	4.04	1.85	42.78	26.95	46.83	28.80	210.93
YBR284W	*YBR284w*	0.92	1.30	1.42	1.82	2.02	2.14	0.85	0.72	3.96	1.86	4.81	2.57	236.44
YBR285W	*YBR285w*	0.90	1.41	1.53	1.89	2.05	2.14	3.20	3.18	37.67	38.63	40.87	41.81	279.45
YBR286W	*APE3*	0.92	1.33	1.50	1.88	2.06	2.16	4.74	0.90	44.87	9.95	49.61	10.86	266.95
YBR287W	*ZSP1*	0.95	1.15	1.37	1.87	2.06	2.21	11.62	5.41	59.99	39.73	71.61	45.15	325.34
YBR288C	*APM3*	0.92	1.08	1.24	1.73	1.96	2.14	18.31	6.37	69.71	49.27	88.03	55.64	333.59
YBR289W	*SNF5*	0.90	0.98	1.07	1.41	1.65	1.79	32.13	19.07	89.32	78.49	121.45	97.56	403.07
YBR290W	*BSD2*	0.97	1.47	1.66	2.03	2.17	2.26	10.02	1.02	61.01	14.74	71.02	15.76	284.67
YBR291C	*CTP1*	0.86	1.27	1.39	1.75	1.92	2.01	9.19	0.85	56.49	8.83	65.68	9.68	284.72
YBR292C	*YBR292c*	0.91	1.36	1.55	1.96	2.11	2.19	15.48	0.70	72.94	8.20	88.43	8.91	307.65
YBR293W	*VBA2*	0.90	1.35	1.53	1.92	2.09	2.19	15.23	1.07	68.99	15.98	84.23	17.05	292.66
YBR294W	*SUL1*	0.98	1.23	1.43	1.78	1.76	1.90	11.45	2.35	60.09	31.00	71.54	33.36	289.60
YBR295W	*PCA1*	0.91	1.27	1.38	1.72	1.91	2.00	2.55	0.61	32.37	2.60	34.92	3.21	261.71
YBR296C	*PHO89*	0.98	1.46	1.69	2.09	2.25	2.32	6.09	2.43	47.14	30.86	53.24	33.29	265.46
YBR296C-A	*YBR296c-a*	0.93	1.24	1.40	1.73	1.95	2.10	9.91	4.48	58.49	31.04	68.40	35.53	303.11
YBR297W	*MAL33*	0.84	1.17	1.30	1.66	1.84	1.94	11.84	2.95	64.35	36.48	76.19	39.42	255.55
YBR298C	*MAL31*	0.86	1.18	1.34	1.74	1.92	2.05	12.23	3.22	65.17	39.88	77.40	43.10	223.98
YBR299W	*MAL32*	1.01	1.28	1.45	1.85	2.06	2.23	4.36	1.10	34.98	12.06	39.34	13.15	288.52
YBR300C	*YBR300c*	0.92	1.30	1.45	1.86	2.02	2.13	6.15	3.04	53.63	38.23	59.78	41.26	309.81
YBR301W	*PAU24*	0.92	1.19	1.41	1.85	2.04	2.20	11.99	2.87	61.45	33.05	73.43	35.92	295.59
YCL001W	*RER1*	0.97	1.12	1.26	1.79	2.03	2.17	18.67	1.68	73.12	26.26	91.79	27.94	365.83
YCL001W-A	*YCL001w-a*	0.90	1.30	1.44	1.86	2.01	2.11	5.52	3.89	48.73	42.94	54.26	46.83	297.93
YCL001W-B	*YCL001w-b*	0.88	1.11	1.29	1.64	1.87	2.04	5.65	2.91	44.94	24.78	50.59	27.69	303.48
YCL002C	*YCL002c*	1.02	1.34	1.55	2.05	2.23	2.33	5.89	1.04	42.84	4.24	48.73	5.28	346.86
YCL002C	*YCL002c*	0.91	1.28	1.44	1.73	1.91	2.08	7.72	1.90	50.90	21.67	58.61	23.51	307.97
YCL005W	*LDB16*	1.01	1.25	1.37	1.81	2.00	2.10	18.08	2.13	68.97	27.73	87.05	29.86	330.39
YCL005W-A	*VMA9*	0.84	1.13	1.12	1.11	1.31	1.53	44.21	24.51	90.08	72.16	134.29	96.67	344.35
YCL006C	*Unknown*	0.90	1.22	1.40	1.77	1.95	2.08	16.65	8.70	56.33	42.62	72.98	51.32	330.77
YCL006C	*Unknown*	0.95	1.17	1.36	1.80	2.00	2.16	5.11	1.12	40.13	16.26	45.24	17.38	294.30
YCL007C	*CWH36*	0.86	1.03	1.00	0.89	0.89	0.86	122.81	126.45	143.59	112.47	266.40	238.92	473.24
YCL008C	*STP22*	0.97	1.27	1.40	1.72	1.87	1.99	19.80	3.83	79.57	48.63	99.38	52.46	384.72
YCL009C	*ILV6*	0.99	1.30	1.51	2.02	2.21	2.31	13.85	2.60	63.57	30.87	77.42	33.48	347.06
YCL010C	*SGF29*	1.06	1.42	1.63	2.03	2.19	2.29	16.34	5.01	64.46	42.81	80.80	47.83	385.75
YCL011C	*GBP2*	0.96	1.19	1.30	1.74	1.95	2.11	4.89	3.95	37.34	31.65	42.23	35.60	337.70
YCL012C	*YCL012c*	0.89	1.28	1.47	1.87	2.03	2.14	4.20	0.70	43.71	7.75	47.91	8.45	283.69
YCL012W	*YCL012W*	1.00	1.31	1.52	2.04	2.23	2.32	5.86	1.57	44.02	21.28	49.88	22.85	331.13
YCL013W	*Unknown*	1.01	1.38	1.58	2.03	2.19	2.29	6.83	3.64	49.12	36.84	55.95	40.47	334.50
YCL014W	*BUD3*	0.94	1.13	1.26	1.81	2.02	2.13	20.14	11.69	75.53	59.17	95.68	70.86	357.39
YCL014W	*BUD3*	0.96	1.25	1.41	1.85	2.03	2.16	9.62	2.72	56.65	26.02	66.27	28.74	309.77
YCL016C	*DCC1*	0.88	1.07	1.14	1.29	1.55	1.79	19.70	5.20	72.21	48.18	91.91	53.38	291.43
YCL021W-A	*YCL021w-a*	0.92	1.26	1.47	1.87	2.09	2.22	2.14	1.21	32.74	15.68	34.87	16.89	265.35
YCL022C	*Unknown*	1.01	1.47	1.71	2.10	2.25	2.34	9.56	7.34	45.11	38.66	54.66	46.01	311.18
YCL023C	*YCL023c*	1.04	1.37	1.61	2.05	2.24	2.31	14.91	1.55	67.22	19.90	82.13	21.45	338.66
YCL023C	*YCL023c*	0.90	1.33	1.52	1.86	2.01	2.13	5.53	3.66	29.90	15.76	35.42	19.42	277.58
YCL024W	*KCC4*	0.96	1.31	1.48	1.96	2.15	2.24	1.61	1.09	18.38	1.46	19.99	2.55	306.93
YCL025C	*AGP1*	1.00	1.35	1.55	2.01	2.18	2.30	3.58	1.12	40.83	4.06	44.41	5.17	364.14
YCL026C	*Unknown*	0.98	1.34	1.54	1.98	2.18	2.28	1.82	0.79	21.28	1.50	23.10	2.29	304.01
YCL026C-A	*FRM2*	0.92	1.19	1.44	1.87	2.07	2.21	6.48	0.88	46.44	13.68	52.91	14.56	294.77
YCL026C-B	*HBN1*	0.88	1.16	1.33	1.75	2.03	2.20	0.50	0.21	7.41	3.37	7.91	3.58	244.39
YCL026C-B	*HBN1*	0.85	1.27	1.30	1.48	1.71	1.86	15.71	4.22	65.93	37.21	81.64	41.42	316.78
YCL027W	*FUS1*	0.91	1.17	1.32	1.78	1.97	2.07	3.78	1.15	42.22	5.78	46.01	6.93	317.76
YCL028W	*RNQ1*	0.93	1.18	1.32	1.83	2.01	2.09	4.80	9.20	44.75	53.64	49.55	62.84	312.24
YCL029C	*BIK1*	1.03	1.41	1.61	2.03	2.19	2.26	6.81	16.99	52.34	69.82	59.15	86.80	279.65
YCL030C	*HIS4*	0.85	1.16	1.15	1.03	1.03	0.99	122.69	122.50	129.54	131.54	252.23	254.05	535.26
YCL030C	*HIS4*	0.85	1.05	1.01	0.85	0.88	0.81	125.81	120.08	118.08	118.22	243.89	238.30	526.24
YCL032W	*STE50*	0.93	1.24	1.42	1.90	2.11	2.22	1.38	1.23	4.69	7.36	6.07	8.59	271.74
YCL033C	*MXR2*	1.02	1.40	1.63	2.13	2.30	2.40	1.75	1.28	14.66	14.93	16.40	16.21	289.62
YCL034W	*LSB5*	0.95	1.21	1.40	1.92	2.13	2.27	2.95	3.07	27.50	29.67	30.45	32.74	291.58
YCL035C	*GRX1*	0.86	1.00	1.17	1.71	1.90	2.09	6.78	2.16	49.19	27.02	55.96	29.18	300.61
YCL036W	*GFD2*	1.00	1.26	1.50	2.04	2.23	2.34	0.97	0.74	10.15	14.83	11.12	15.57	278.75
YCL037C	*SRO9*	1.00	1.27	1.48	2.02	2.20	2.28	14.76	1.89	68.29	27.54	83.05	29.43	329.13
YCL038C	*ATG22*	0.92	1.30	1.42	1.79	1.96	2.09	23.97	9.42	61.95	44.84	85.92	54.26	356.39
YCL038C	*ATG22*	0.96	1.18	1.34	1.73	1.92	2.05	12.03	1.52	53.77	21.25	65.81	22.77	311.38
YCL039W	*GID7*	0.98	1.27	1.46	2.00	2.17	2.22	17.68	2.19	70.72	28.36	88.40	30.55	337.14
YCL040W	*GLK1*	0.98	1.32	1.53	2.01	2.18	2.26	9.90	1.40	50.48	11.51	60.39	12.91	298.01
YCL042W	*YCL042w*	0.97	1.34	1.55	2.02	2.20	2.27	21.14	2.00	76.55	20.79	97.69	22.79	337.24
YCL044C	*MGR1*	0.90	1.07	1.19	1.62	1.85	1.96	2.54	1.07	31.85	9.69	34.39	10.76	306.77
YCL045C	*EMC1*	0.96	1.32	1.56	2.03	2.20	2.28	1.89	1.55	22.83	16.45	24.72	18.00	293.20
YCL046W	*YCL046w*	0.96	1.29	1.50	1.98	2.17	2.25	2.18	2.04	26.46	24.40	28.65	26.43	296.29
YCL047C	*YCL047c*	0.96	1.31	1.55	2.06	2.21	2.30	3.78	5.72	39.78	43.66	43.56	49.38	299.29
YCL048W	*SPS22*	0.96	1.28	1.54	2.06	2.22	2.31	5.66	6.65	48.07	46.92	53.73	53.57	298.23
YCL049C	*YCL049c*	1.01	1.36	1.60	2.08	2.24	2.35	4.47	1.97	37.70	23.45	42.17	25.41	294.68
YCL050C	*APA1*	0.96	1.25	1.49	2.04	2.23	2.34	1.29	1.23	9.70	13.64	10.99	14.86	277.31
YCL051W	*LRE1*	0.98	1.15	1.32	1.85	2.08	2.23	3.53	3.69	39.13	36.19	42.66	39.88	279.24
YCL055W	*KAR4*	1.03	1.36	1.56	2.10	2.24	2.31	8.00	1.52	49.58	22.37	57.58	23.89	317.30
YCL056C	*YCL056c*	1.01	1.37	1.52	2.00	2.18	2.29	1.18	1.08	8.06	0.44	9.25	1.51	282.52

ORF.name	Strain	Optical density at 600 nm at regular intervals (h)						GLUCOSE		FRUCTOSE		TOTAL SUGARS (g/l)		TOTAL AMINO ACIDS (mg/L)
		0	26	33	48	59	78	102 h	118 h	102 h	118 h	102 h	118 h	102 h
YCL057C-A	YCL057c-a	0.91	1.18	1.34	1.74	1.97	2.08	11.48	3.95	59.05	27.79	70.53	31.73	306.32
YCL057W	PRD1	0.94	1.24	1.42	1.93	2.10	2.20	11.55	1.21	62.99	12.59	74.54	13.80	320.68
YCL058C	FYV5	0.96	1.22	1.24	1.34	1.63	1.94	35.69	18.79	76.43	61.83	112.12	80.62	348.85
YCL060C	YCL060C	0.97	1.17	1.22	1.68	1.96	2.17	17.77	2.60	80.99	33.86	98.77	36.46	335.23
YCL061C	MRC1	0.98	1.28	1.41	1.84	2.07	2.27	0.85	0.79	3.81	0.76	4.67	1.54	258.38
YCL061C	MRC1	0.92	1.10	1.12	1.52	1.80	1.99	16.22	9.15	69.40	60.11	85.62	69.26	312.34
YCL062W	YCL062W	0.91	1.15	1.26	1.70	1.91	2.01	12.07	4.85	61.99	45.57	74.06	50.42	328.89
YCL063W	VAC17	0.93	1.20	1.31	1.77	1.97	2.12	1.41	1.40	20.66	18.15	22.08	19.54	307.12
YCL064C	CHA1	0.94	1.19	1.35	1.76	1.99	2.08	3.93	3.29	38.21	32.63	42.14	35.92	295.67
YCL069W	VBA3	1.03	1.33	1.55	2.05	2.22	2.34	1.49	1.60	18.28	20.36	19.76	21.96	270.84
YCL074W	YCL074w	0.96	1.34	1.52	1.88	2.03	2.15	19.45	14.20	58.45	47.83	77.90	62.03	344.63
YCL075W	YCL075w	0.95	1.34	1.54	1.89	2.04	2.15	20.07	9.49	59.89	43.11	79.96	52.61	345.35
YCL076W	YCL076w	0.99	1.34	1.51	1.92	2.10	2.26	3.97	3.30	25.35	15.70	29.32	19.00	300.74
YCR001W	YCR001w	0.98	1.31	1.54	2.05	2.22	2.34	1.09	1.25	5.81	13.79	6.90	15.05	267.33
YCR002C	CDC10	0.94	1.11	1.22	1.72	1.95	2.05	21.94	20.98	71.79	71.97	93.72	92.95	290.05
YCR003W	MRPL32	0.94	1.16	1.30	1.63	1.89	2.07	1.66	1.49	13.93	7.72	15.58	9.21	252.40
YCR004C	YCP4	0.89	1.07	1.16	1.72	1.96	2.09	12.61	13.88	65.88	62.59	78.49	76.48	320.87
YCR005C	CIT2	0.98	1.28	1.44	1.89	2.11	2.22	1.99	1.12	29.19	3.47	31.18	4.59	305.66
YCR006C	YCR006c	0.94	1.21	1.37	1.81	2.02	2.11	7.56	1.24	52.69	5.42	60.25	6.66	313.90
YCR007C	YCR007c	1.02	1.35	1.53	1.98	2.16	2.23	9.15	1.20	62.29	10.00	71.44	11.21	308.10
YCR008W	SAT4	0.95	1.20	1.35	1.80	2.03	2.12	3.38	1.52	41.53	18.54	44.92	20.06	312.69
YCR009C	RVS161	0.93	1.13	1.23	1.61	1.84	1.93	1.26	1.17	3.75	1.97	5.02	3.14	263.26
YCR010C	ADY2	1.00	1.30	1.51	2.00	2.18	2.28	2.38	1.80	27.43	20.00	29.81	21.80	288.32
YCR011C	ADP1	0.91	1.18	1.37	1.88	2.08	2.18	2.46	3.12	31.88	31.82	34.34	34.94	287.81
YCR014C	POL4	0.91	1.18	1.40	1.95	2.16	2.26	1.23	1.07	8.94	3.05	10.17	4.12	277.39
YCR015C	YCR015c	0.94	1.16	1.33	1.79	2.00	2.11	8.11	3.44	55.29	37.05	63.40	40.49	300.61
YCR016W	YCR016w	0.95	1.22	1.34	1.73	1.87	2.02	0.93	0.90	3.88	0.97	4.81	1.87	267.63
YCR017C	CWH43	0.95	1.12	1.25	1.70	1.90	1.99	8.28	8.00	57.69	49.40	65.97	57.40	295.27
YCR019W	MAK32	0.90	1.14	1.30	1.78	2.00	2.14	1.25	1.14	3.77	2.22	5.01	3.36	274.96
YCR020C	PET18	1.04	1.38	1.58	2.06	2.22	2.31	11.60	1.37	59.47	13.16	71.07	14.53	321.78
YCR020C-A	MAK31	1.01	1.46	1.69	2.17	2.32	2.42	1.18	1.11	13.41	0.32	14.59	1.43	290.53
YCR020W-B	HTL1	0.93	1.31	1.48	1.79	1.94	2.03	11.84	2.72	62.52	37.70	74.36	40.42	285.33
YCR021C	HSP30	0.99	1.38	1.58	2.02	2.17	2.25	1.06	1.08	9.72	1.99	10.78	3.07	286.77
YCR022C	YCR022c	0.92	1.26	1.42	1.88	2.03	2.12	1.20	1.14	7.62	6.64	8.82	7.78	275.82
YCR023C	YCR023c	1.00	1.42	1.68	2.12	2.27	2.33	1.97	1.11	25.16	10.99	27.13	12.10	280.88
YCR024C	SLM5	0.89	1.14	1.17	1.43	1.66	1.84	6.43	1.56	52.33	23.28	58.76	24.84	248.94
YCR024C-A	PMP1	0.90	1.31	1.47	1.87	2.03	2.15	16.73	1.15	70.50	16.50	87.23	17.65	323.56
YCR025C	YCR025c	0.90	1.30	1.43	1.84	1.75	1.92	2.00	0.74	30.23	2.21	32.23	2.94	307.89
YCR026C	NPP1	0.91	1.28	1.40	1.69	1.98	2.27	1.63	0.75	25.32	1.42	26.95	2.17	298.26
YCR027C	RHB1	0.91	1.35	1.50	1.88	2.06	2.13	15.86	1.33	70.43	20.68	86.29	22.00	342.35
YCR028C	FEN2	0.92	1.23	1.26	1.52	1.77	1.96	32.68	12.74	91.40	68.27	124.07	81.01	340.01
YCR028C-A	RIM1	0.86	0.92	0.91	0.94	1.21	1.51	37.69	27.91	95.43	81.46	133.12	109.37	288.09
YCR030C	SYP1	0.91	1.16	1.37	1.85	2.07	2.24	0.81	0.63	14.26	3.35	15.06	3.98	277.67
YCR031C	RPS14a	0.86	1.22	1.32	1.74	1.96	2.10	15.00	4.06	72.38	44.80	87.38	48.86	318.74
YCR032W	BPH1	0.93	1.16	1.36	1.82	1.98	2.10	10.74	1.46	57.03	22.28	67.77	23.74	291.47
YCR033W	SNT1	0.92	1.08	1.23	1.79	2.00	2.17	25.98	10.47	83.10	57.83	109.08	68.31	298.82
YCR034W	FEN1	0.91	1.21	1.28	1.58	1.75	1.88	37.82	35.51	92.09	98.14	129.91	133.65	306.22
YCR036W	RBK1	0.94	1.34	1.52	1.95	2.11	2.21	4.01	1.37	41.84	21.75	45.84	23.12	185.63
YCR037C	PHO87	0.92	1.32	1.54	1.88	2.05	2.19	1.34	1.20	13.72	1.29	15.05	2.49	239.75
YCR037C	PHO87	0.89	1.18	1.22	1.42	1.58	1.68	30.47	27.48	89.19	88.14	119.67	115.61	235.11
YCR043C	YCR043c	0.93	1.32	1.42	1.77	1.94	2.06	5.41	4.49	51.99	42.91	57.40	47.40	291.56
YCR044C	PER1	0.90	1.02	1.11	1.41	1.68	1.88	2.24	0.63	26.26	2.07	28.49	2.70	273.89
YCR045C	RRT12	0.91	1.28	1.40	1.73	1.91	2.06	0.88	0.63	16.85	2.07	17.73	2.69	272.03
YCR046C	IMG1	0.94	0.98	0.98	0.94	0.94	0.92	142.06	130.00	142.27	131.91	284.33	261.91	192.52
YCR047C		0.91	0.97	0.99	1.16	1.39	1.79	45.35	25.42	91.79	84.71	137.14	110.13	297.77
YCR047C	BUD23	0.84	1.05	1.02	1.01	1.21	1.58	42.14	23.08	91.19	72.05	133.33	95.13	347.34
YCR048W	ARE1	0.90	1.18	1.31	1.66	1.87	2.07	1.57	1.30	15.43	9.00	17.00	10.30	265.83
YCR048W	ARE1	0.91	1.13	1.34	1.90	2.07	2.22	6.32	0.94	47.01	13.04	53.33	13.98	295.45
YCR049C	YCR049c	0.89	1.36	1.47	1.81	1.98	2.06	10.46	0.84	61.06	12.11	71.53	12.95	314.80
YCR050C	YCR050c	0.86	1.19	1.29	1.64	1.85	2.03	1.28	0.74	23.23	2.76	24.51	3.50	303.13
YCR051W	YCR051w	0.90	1.27	1.39	1.76	1.93	2.06	11.76	0.88	63.86	11.70	75.62	12.58	312.88
YCR053W	THR4	0.94	1.17	1.20	1.44	1.77	2.01	14.68	4.16	70.08	42.82	84.77	46.98	284.86
YCR059C	YIH1	0.90	1.28	1.45	1.82	2.06	2.12	20.85	1.10	76.39	17.81	97.23	18.91	322.60
YCR060W	TAH1	0.87	1.03	1.19	1.77	1.99	2.15	6.78	1.49	51.92	26.40	58.71	27.89	290.90
YCR061W	YCR061w	0.91	1.27	1.43	1.80	2.00	2.12	5.80	0.71	46.99	11.38	52.78	12.09	302.73
YCR061W	YCR061w	1.04	1.39	1.59	2.02	2.16	2.26	7.84	1.29	52.97	15.54	60.81	16.83	308.76
YCR061W	YCR061w	0.88	1.26	1.38	1.74	1.94	2.04	4.61	0.96	39.93	9.94	44.54	10.90	276.76
YCR062W	YCR062W	0.93	1.09	1.21	1.70	1.93	2.12	11.70	6.74	62.49	47.48	74.19	54.22	310.70
YCR063W	BUD31	0.92	1.02	1.08	1.20	1.49	1.67	69.94	56.11	116.55	84.91	186.49	141.02	390.68
YCR065W	HCM1	0.90	1.20	1.25	1.57	1.83	2.01	8.76	2.21	60.26	32.86	69.02	35.08	297.81
YCR066W	RAD18	0.88	1.24	1.40	1.75	1.94	2.06	9.72	1.84	60.15	27.97	69.87	29.81	311.66
YCR067C	SED4	0.92	1.07	1.23	1.67	1.91	2.08	7.61	4.37	54.43	40.43	62.04	44.79	304.45
YCR068W	ATG15	0.88	1.22	1.35	1.73	1.91	2.02	23.82	13.63	80.55	67.86	104.37	81.49	316.58
YCR069W	CPR4	0.90	1.08	1.28	1.77	1.98	2.15	0.77	1.03	11.05	6.27	11.82	7.30	287.72
YCR071C	IMG2	1.00	1.35	1.42	1.96	2.19	2.25	4.67	0.97	48.38	22.45	53.05	23.43	192.70
YCR073C	SSK22	0.92	1.11	1.29	1.74	1.93	2.09	11.49	2.68	60.03	31.51	71.53	34.19	309.83
YCR073W-A	SOL2	0.90	1.25	1.36	1.70	1.87	2.02	10.32	7.42	57.78	51.10	68.10	58.52	240.61
YCR075C	ERS1	0.89	1.02	1.18	1.69	1.92	2.13	1.07	1.06	16.12	12.63	17.19	13.69	285.31
YCR075W-A	YCR075w-a	0.92	1.23	1.40	1.73	1.89	2.03	22.75	17.66	76.33	54.28	99.08	71.94	357.96
YCR076C	YCR076c	0.93	1.36	1.49	1.89	2.04	2.14	3.49	1.08	44.62	17.42	48.10	18.50	248.15
YCR077C	PAT1	0.93	1.37	1.53	1.89	2.07	2.17	4.86	0.89	45.77	11.53	50.63	12.42	265.06
YCR079W	PTC6	0.93	1.40	1.50	1.89	2.06	2.16	16.11	1.21	72.07	19.42	88.18	20.63	310.59
YCR081W	SRB8	0.90	1.28	1.38	1.79	2.01	2.14	9.17	1.19	69.53	22.64	78.70	23.82	300.02
YCR082W	AHC2	0.91	1.36	1.57	1.94	2.11	2.21	7.28	0.79	52.28	6.41	59.56	7.20	280.50
YCR083W	TRX3	0.89	1.01	1.17	1.68	1.89	2.08	5.31	0.99	42.10	9.95	47.42	10.95	293.04
YCR084C	TUP1	0.90	0.91	0.90	0.95	1.05	1.20	44.14	19.90	98.42	71.69	142.56	91.59	290.81
YCR084C	TUP1	0.90	1.13	1.13	1.09	1.13	1.21	2.17	1.52	20.13	15.17	22.30	16.69	260.51
YCR085W	YCR085w	0.91	1.28	1.45	1.80	1.97	2.11	10.22	0.81	60.40	10.05	70.62	10.86	298.92
YCR086W	CSM1	0.89	1.20	1.25	1.48	1.68	1.84	18.75	4.73	76.48	45.66	95.23	50.39	315.25
YCR087C-A	YCR087c-a	0.90	1.19	1.28	1.57	1.79	1.96	0.85	0.51	10.59	3.39	11.43	3.90	280.72
YCR087W	YCR087w	0.89	1.25	1.38	1.73	1.91	2.03	1.42	0.70	26.98	9.95	28.40	10.66	293.08
YCR088W	ABP1	0.88	1.01	1.17	1.66	1.87	2.04	13.14	1.04	63.22	12.25	76.37	13.29	308.41
YCR089W	FIG2	0.91	1.10	1.29	1.77	1.95	2.13	4.02	1.03	39.89	7.64	43.91	8.67	287.84
YCR090C	YCR090c	0.93	1.18	1.29	1.78	1.97	2.12	12.85	4.47	56.18	31.32	69.03	35.79	321.73
YCR091W	KIN82	0.96	1.26	1.39	1.80	1.99	2.20	3.19	3.07	6.19	2.99	9.38	6.06	281.49
YCR092C	MSH3	0.96	1.27	1.41	1.87	2.04	2.20	4.42	3.15	29.30	8.84	33.72	11.99	304.39
YCR094W	CDC50	1.00	1.40	1.60	1.98	2.08	2.18	4.40	3.17	27.21	9.70	31.60	12.87	295.92
YCR095C	OCA4	0.87	0.99	1.15	1.63	1.91	2.14	1.10	0.71	19.70	9.32	20.80	10.03	265.67
YCR095W-A	YCR095w-a	0.91	1.26	1.38	1.74	1.94	2.04	6.10	1.26	45.36	15.26	51.46	16.52	275.79
YCR098C	GIT1	0.92	1.18	1.30	1.75	1.93	2.12	8.11	3.34	47.81	15.53	55.92	18.87	313.22
YCR099C	YCR099c	0.98	1.30	1.42	1.84	2.01	2.18	6.89	3.34	43.32	14.27	50.21	17.60	307.63
YCR100C	YCR100c	1.05	1.38	1.53	1.97	2.13	2.27	10.47	3.35	53.12	16.55	63.58	19.90	316.87
YCR101C	YCR101c	1.02	1.32	1.44	1.89	2.05	2.20	8.70	3.48	45.50	18.39	54.20	21.88	272.55
YCR102C	YCR102c	0.97	1.23	1.31	1.76	1.95	2.13	9.99	3.91	49.88	25.09	59.87	29.00	312.00
YCR102W-A	YCR102w-a	0.87	1.00	1.16	1.55	1.76	1.98	1.97	0.59	29.06	7.56	31.02	8.14	285.43
YCR105W	ADH7	0.95	1.21	1.29	1.83	2.02	2.21	14.53	6.79	61.41	41.16	75.93	47.95	321.42
YCR106W	RDS1	1.02	1.40	1.43	1.94	2.10	2.21	11.50	4.33	51.88	30.41	63.39	34.74	321.28
YCR107W	AAD3	0.95	1.19	1.35	1.72	1.92	2.09	9.55	2.03	52.35	24.92	61.90	26.95	322.72
YDL001W	RMD1	0.91	1.12	1.32	1.81	2.00	2.15	6.84	2.84	52.23	33.88	59.07	36.72	293.20
YDL002C	NHP10	0.89	1.08	1.30	1.71	1.87	2.03	1.94	1.55	26.15	22.00	28.08	23.56	280.04
YDL006W	PTC1	0.93	1.16	1.34	1.75	1.94	2.08	0.98	1.08	12.69	14.67	13.67	15.75	292.89
YDL009C	YDL009c	0.90	1.11	1.29	1.76	1.95	2.11	8.33	5.69	55.06	45.63	63.38	51.32	309.53
YDL010W	GRX6	0.93	1.14	1.38	1.96	2.02	2.08	7.33	4.52	54.22	40.69	61.55	45.21	306.56
YDL011C	YDL011c	0.87	1.04	1.23	1.66	1.85	2.03	4.02	2.41	40.27	31.43	44.30	33.84	300.39
YDL012C	YDL012c	0.94	1.16	1.37	1.80	1.99	2.13	2.81	2.43	35.77	30.97	38.58	33.40	303.06
YDL013W	SLX5	0.85	0.98	1.09	1.41	1.65	1.84	0.77	0.85	6.54	6.64	7.31	7.48	263.85
YDL018C	ERP3	0.87	1.08	1.31	1.72	1.90	2.02	1.59	1.74	22.95	23.17	24.53	24.91	278.19
YDL019C	OSH2	0.90	1.12	1.33	1.72	1.93	2.06	4.33	3.15	38.82	31.44	43.15	34.59	286.57
YDL020C	RPN4	0.91	1.09	1.26	1.70	1.90	2.02	37.02	26.94	101.13	85.05	138.15	113.99	335.89
YDL021W	GPM2	0.90	1.05	1.20	1.63	1.85	2.03	7.02	3.53	51.53	35.22	58.55	38.75	274.27
YDL022W	GPD1	0.87	0.99	1.07	1.44	1.72	1.98	2.33	1.76	37.15	27.62	39.48	29.38	286.50
YDL023C	YDL023c	0.90	1.01	1.06	1.32	1.63	1.75	39.11	33.85	96.18	87.74	135.29	121.59	324.64
YDL024C	DIA3	0.88	1.07	1.25	1.63	1.83	2.00	6.59	3.61	45.34	37.55	51.93	41.15	304.28
YDL025C	RTK1	0.92	1.13	1.37	1.78	1.96	2.12	5.68	1.94	51.08	27.35	56.76	29.29	293.39
YDL026W	YDL026w	0.86	1.03	1.23	1.64	1.83	1.99	5.86	4.58	49.54	44.31	55.40	48.88	301.61
YDL026W	YDL026w	0.88	1.24	1.38	1.70	1.90	2.00	5.88	1.09	45.36	14.27	51.24	15.36	282.30
YDL027C	YDL027c	0.92	1.12	1.34	1.77	1.98	2.14	0.73	0.83	5.64	10.89	6.37	11.71	280.78
YDL032W	YDL032w	0.91	1.27	1.40	1.77	1.98	2.06	10.66	6.11	61.80	44.14	72.46	50.25	274.86
YDL033C	SLM3	0.90	1.12	1.34	1.75	1.92	2.06	2.66	1.39	34.51	20.41	37.17	21.79	295.31
YDL034W	YDL034w	0.93	1.17	1.41	1.83	2.00	2.10	5.13	3.34	47.52	35.54	52.66	38.89	295.55
YDL035C	GPR1	0.87	1.05	1.22	1.65	1.89	2.06	0.72	0.80	5.79	3.03	6.52	3.83	272.35
YDL036C	PUS9	0.88	1.08	1.26	1.77	2.01	2.17	0.75	0.91	8.73	10.77	9.48	11.68	278.18
YDL036C	PUS9	0.83	1.18	1.34	1.60	1.78	1.92	8.08	0.83	51.30	7.81	59.38	8.64	286.95
YDL037C	BSC1	0.90	1.06	1.25	1.71	1.92	2.08	7.27	4.39	52.53	39.75	59.80	44.14	302.81

ORF.name	Strain	Optical density at 600 nm at regular intervals (h)						GLUCOSE		FRUCTOSE		TOTAL SUGARS (g/l)		TOTAL AMINO ACIDS (mg/L)
		0	26	33	48	59	78	102 h	118 h	102 h	118 h	102 h	118 h	102 h
YDL038C	YDL038c	0.88	1.02	1.19	1.68	1.90	2.06	6.44	6.22	51.58	48.17	58.03	54.39	297.46
YDL039C	PRM7	0.85	1.08	1.27	1.75	1.97	2.15	0.88	1.02	12.47	13.55	13.35	14.57	267.39
YDL040C	NAT1	0.85	0.94	0.95	0.84	0.84	0.80	126.50	121.44	146.38	111.37	272.88	232.81	324.81
YDL041W	YDL041w	0.91	1.17	1.45	1.94	2.11	2.26	2.43	1.08	30.11	14.99	32.54	16.07	287.37
YDL042C	SIR2	0.88	1.01	1.19	1.87	1.91	2.02	2.43	1.37	33.25	18.83	35.67	20.20	288.80
YDL044C	MTF2	0.92	1.14	1.12	1.00	1.00	0.97	120.42	124.65	133.91	129.12	254.34	253.78	536.65
YDL045W-A	MRP10	0.96	1.20	1.43	1.87	2.09	2.24	1.21	1.08	15.91	10.66	17.12	11.74	271.51
YDL046W	NPC2	0.90	1.13	1.34	1.91	2.00	2.02	2.43	1.86	32.50	25.81	34.93	27.67	291.51
YDL047W	SIT4	0.91	1.04	1.08	1.22	1.40	1.57	64.95	54.84	102.31	95.06	167.27	149.90	369.83
YDL048C	STP4	0.92	1.19	1.44	1.87	2.04	2.17	1.52	1.71	23.69	21.80	25.21	23.51	287.20
YDL049C	KNH1	0.92	1.08	1.07	0.93	0.93	0.90	122.38	120.62	126.27	126.82	248.65	247.44	536.46
YDL050C	YDL050c	0.89	1.07	1.26	1.72	1.94	2.09	3.32	1.63	37.25	22.42	40.57	24.05	288.07
YDL051W	LHP1	0.91	1.09	1.30	1.78	2.00	2.15	2.93	2.75	34.46	31.54	37.39	34.29	292.19
YDL052C	SLC1	0.88	1.02	1.17	1.64	1.87	2.03	7.44	4.15	50.94	36.88	58.38	41.03	316.44
YDL053C	FBP4	0.87	1.04	1.22	1.69	1.91	2.06	10.61	4.35	54.39	42.01	65.00	46.36	306.93
YDL054C	MCH1	0.86	1.04	1.18	1.60	1.82	1.93	8.69	2.92	58.68	35.87	67.37	38.79	313.33
YDL056W	MBP1	0.89	1.06	1.20	1.56	1.75	1.85	25.65	19.87	73.83	75.51	99.48	95.38	350.90
YDL057W	YDL057w	0.90	1.07	1.07	0.92	0.92	0.89	124.19	123.54	132.81	136.26	256.99	259.80	537.90
YDL059C	RAD59	0.83	0.98	1.16	1.59	1.83	1.99	5.31	3.70	46.69	38.72	52.00	42.42	305.97
YDL061C	RPS29b	0.95	1.07	1.17	1.56	1.89	2.12	5.09	4.90	43.06	44.12	48.15	49.02	264.62
YDL062W	YDL062w	0.88	1.07	1.06	0.93	0.95	0.96	95.05	88.27	125.55	118.15	220.60	206.42	417.98
YDL063C	YDL063c	0.86	1.06	1.05	0.92	1.01	1.26	73.13	57.05	114.02	102.18	187.15	159.23	369.98
YDL065C	PEX19	0.93	1.12	1.31	1.79	1.98	2.12	8.46	3.91	52.23	39.72	60.69	43.64	293.02
YDL066W	IDP1	0.94	1.18	1.39	1.80	1.99	2.10	5.97	2.42	48.68	30.47	54.65	32.88	303.70
YDL067C	COX9	0.99	1.08	1.09	1.01	1.02	1.00	123.50	118.50	121.56	115.56	245.06	234.06	276.01
YDL068W	YDL068w	0.88	1.08	1.08	1.00	1.25	1.54	34.86	20.57	89.28	73.33	124.14	93.90	300.24
YDL069C	CBS1	0.94	1.15	1.13	1.00	1.00	0.97	123.87	130.70	127.52	100.76	251.39	231.46	510.03
YDL069C	CBS1	0.92	1.11	1.10	0.96	0.97	0.94	122.48	120.90	135.97	132.67	258.45	253.57	537.92
YDL070W	BDF2	0.89	1.03	1.19	1.70	1.95	2.12	4.39	5.39	42.26	43.42	46.65	48.80	294.61
YDL071C	YDL071c	0.89	1.08	1.23	1.67	1.93	2.09	15.03	6.70	64.17	46.45	79.20	53.15	328.48
YDL073W	YDL073w	0.84	1.06	1.28	1.73	1.94	2.05	15.35	5.98	61.85	43.52	77.21	49.49	322.62
YDL074C	BRE1	1.05	1.32	1.53	1.93	2.09	2.24	22.16	3.04	67.75	31.55	89.92	34.59	329.07
YDL075W	RPL31a	1.04	1.23	1.35	1.85	2.14	2.32	8.40	0.93	50.71	6.77	59.11	7.69	296.85
YDL076C	RXT3	0.87	1.09	1.33	1.71	1.93	2.07	13.65	11.15	67.61	60.80	81.26	71.95	328.06
YDL077C	VAM6	0.93	1.12	1.33	1.78	2.00	2.15	7.98	5.77	54.89	45.80	62.87	51.57	297.02
YDL077C	VAM6	0.94	1.25	1.35	1.55	1.69	1.79	45.76	23.12	100.19	64.70	145.95	87.82	404.58
YDL078C	MDH3	0.84	1.02	1.23	1.67	1.86	1.96	1.82	1.72	27.29	25.81	29.11	27.53	283.24
YDL079C	MRK1	0.90	1.12	1.35	1.84	2.03	2.18	2.96	3.81	36.66	37.25	39.62	41.06	285.56
YDL080C	THI3	0.91	1.11	1.27	1.64	1.84	1.95	3.93	3.51	39.48	38.11	43.41	41.62	286.71
YDL081C	RPP1a	0.97	1.16	1.21	1.28	1.54	1.81	35.17	17.73	87.00	65.50	122.17	83.23	359.05
YDL082W		0.90	1.05	1.16	1.62	1.88	2.05	2.84	4.45	36.09	42.95	38.93	47.40	271.81
YDL082W	RPL13a	0.92	1.29	1.38	1.78	2.03	2.21	9.36	3.96	51.43	28.12	60.79	32.08	297.42
YDL083C	RPS16b	0.88	0.99	1.07	1.46	1.79	2.02	10.63	11.46	60.03	62.18	70.67	73.64	306.34
YDL085C-A	YDL085c-a	0.93	1.20	1.34	1.75	1.95	2.08	14.47	3.84	67.07	31.20	81.55	35.04	318.34
YDL085W	NDE2	0.89	1.06	1.24	1.73	1.96	2.11	12.12	4.71	63.46	42.12	75.58	46.83	317.17
YDL086W	YDL086w	0.89	1.09	1.27	1.75	1.98	2.08	21.22	6.06	73.83	48.92	95.05	54.97	339.59
YDL088C	ASM4	0.95	1.42	1.62	1.99	2.19	2.22	16.61	1.56	63.79	23.93	80.40	25.50	326.75
YDL089W	NUR1	0.88	1.35	1.52	1.88	2.11	2.16	14.54	9.79	62.42	50.39	76.96	60.18	321.97
YDL090C	RAM1	0.95	1.29	1.40	1.69	1.95	2.06	39.75	34.10	87.59	87.60	127.34	121.70	366.10
YDL091C	UBX3	0.94	1.36	1.55	1.92	2.13	2.17	11.57	4.14	55.41	35.38	66.98	39.49	319.63
YDL093W	PMT5	0.90	1.33	1.56	1.93	2.13	2.19	10.01	1.17	52.83	16.63	62.83	17.79	312.99
YDL094C	YDL094c	0.87	1.21	1.40	1.79	2.01	2.09	14.95	1.66	61.67	23.19	76.62	24.84	318.48
YDL095W	PMT1	1.01	1.36	1.55	1.92	2.12	2.18	14.19	1.46	57.81	17.66	71.99	19.11	325.50
YDL096C	YDL096c	1.01	1.42	1.57	1.93	2.10	2.19	12.99	6.63	60.09	45.67	73.08	52.30	290.29
YDL099W	BUG1	0.95	1.30	1.47	1.85	2.05	2.20	16.25	4.64	63.35	38.45	79.60	43.09	344.78
YDL100C	GET3	0.94	1.31	1.43	1.81	2.04	2.21	3.23	3.61	37.75	34.51	40.98	38.13	312.78
YDL101C	DUN1	0.92	1.22	1.26	1.64	1.93	2.15	2.79	4.31	35.14	38.68	37.92	42.98	295.59
YDL104C	QRI7	0.95	1.23	1.22	1.06	1.05	1.01	129.89	131.19	130.18	130.28	260.07	261.47	524.19
YDL106C	PHO2	0.92	1.27	1.46	1.85	2.20	2.12	7.21	1.47	55.23	18.18	62.45	19.64	315.62
YDL107W	MSS2	1.00	1.26	1.26	1.19	1.35	1.47	20.31	7.43	81.11	53.75	101.41	61.17	243.42
YDL109C	YDL109c	0.88	1.33	1.45	1.72	1.90	2.05	23.32	9.13	78.84	51.60	102.16	60.72	357.69
YDL110C	TMA17	1.01	1.34	1.43	1.77	1.86	2.05	4.80	1.14	44.22	15.64	49.02	16.78	368.05
YDL112W	TRM3	0.94	1.32	1.45	1.77	1.95	2.11	27.97	13.41	78.71	60.47	106.69	73.89	366.86
YDL113C	ATG20	0.90	1.11	1.13	1.24	1.54	1.70	12.62	3.27	68.21	38.52	80.83	41.79	250.96
YDL114W	YDL114w	0.93	1.28	1.40	1.74	1.98	2.19	0.79	0.84	8.37	6.68	9.17	7.52	287.14
YDL115C	IWR1	0.94	1.07	1.16	1.51	1.76	1.87	74.01	79.28	113.37	118.07	187.39	197.35	312.18
YDL116W	NUP84	0.87	1.21	1.25	1.47	1.73	1.97	47.13	37.54	99.99	92.10	147.12	129.65	372.80
YDL117W	CYK3	1.03	1.34	1.40	1.71	2.01	2.27	22.45	7.89	77.63	52.61	100.08	60.51	262.09
YDL118W	YDL118w	0.97	1.36	1.53	1.89	2.10	2.28	1.32	1.14	7.95	0.55	9.26	1.68	260.04
YDL119C	YDL119c	0.92	1.27	1.38	1.74	1.97	2.14	23.52	9.87	74.64	54.87	98.15	64.74	363.03
YDL121C	YDL121c	0.91	1.25	1.37	1.73	1.92	2.10	17.13	14.64	69.18	60.97	86.31	75.61	340.19
YDL122W	UBP1	0.98	1.34	1.48	1.91	2.28	2.30	12.23	6.12	61.74	41.75	73.98	47.87	316.14
YDL123W	SNA4	1.00	1.45	1.64	2.02	2.18	2.28	27.07	14.65	80.50	62.52	107.57	77.16	366.38
YDL124W	YDL124w	0.99	1.30	1.45	2.00	2.26	2.14	11.61	4.00	57.48	33.77	69.09	37.77	357.39
YDL125C	HNT1	0.95	1.35	1.49	1.80	1.97	2.12	21.78	9.56	74.38	52.01	96.17	61.57	361.49
YDL127W	PCL2	0.94	1.30	1.42	1.78	1.99	2.16	3.50	2.04	39.66	27.40	43.17	29.44	310.09
YDL128W	VCX1	0.90	1.29	1.44	1.81	2.00	2.19	1.86	1.32	22.43	2.71	24.29	4.03	276.69
YDL129W	YDL129w	0.95	1.33	1.48	1.94	2.00	2.10	1.24	1.19	4.28	1.08	5.52	2.27	241.31
YDL129W	YDL129w	0.92	1.43	1.65	2.01	2.16	2.27	2.37	6.31	30.55	44.18	32.92	50.49	300.63
YDL130W	RPP1b	1.02	1.33	1.47	1.91	2.16	2.34	1.28	0.84	23.10	3.83	24.39	4.67	303.93
YDL130W-A	STF1	0.93	1.19	1.29	1.75	1.94	2.08	15.13	4.08	61.25	29.32	76.39	33.39	330.55
YDL131W	LYS21	0.92	1.29	1.44	1.79	1.98	2.13	16.15	9.96	67.68	53.57	83.83	63.53	336.31
YDL133C-A	RPL41b	0.87	0.99	1.15	1.57	1.81	2.02	5.40	1.48	46.00	25.52	51.46	27.99	286.29
YDL133W	YDL133w	0.99	1.37	1.56	1.93	2.12	2.25	14.44	10.13	66.23	54.19	80.67	64.33	342.63
YDL134C	PPH21	0.92	1.26	1.36	1.64	1.86	2.06	4.93	5.24	41.58	37.31	46.51	42.54	312.90
YDL134C-A	YDL134C-A	0.92	1.24	1.34	1.66	1.86	2.02	23.58	11.57	76.88	55.97	100.46	67.54	358.80
YDL135C	RDI1	0.95	1.30	1.41	1.77	1.97	2.14	21.61	9.22	78.81	52.70	100.42	61.91	349.38
YDL136W	RPL35b	0.97	1.32	1.42	1.79	2.00	2.16	19.17	8.21	72.49	50.63	91.66	58.84	346.10
YDL137W	ARF2	0.99	1.41	1.61	2.00	2.17	2.29	19.98	4.37	78.88	38.34	98.86	42.71	355.94
YDL138W	RGT2	1.01	1.40	1.55	1.92	2.14	2.30	1.35	0.95	18.46	4.06	19.81	5.01	311.71
YDL142C	CRD1	1.00	1.34	1.50	1.88	2.06	2.20	3.24	2.79	36.91	31.74	40.16	34.53	254.03
YDL144C	YDL144c	0.98	1.29	1.41	1.80	2.01	2.17	14.49	14.43	66.83	62.74	81.33	77.18	329.26
YDL146W	LDB17	0.93	1.28	1.42	1.83	2.02	2.16	4.17	12.54	41.41	58.62	45.58	71.16	302.95
YDL146W	LDB17	0.93	1.18	1.24	1.52	1.76	1.92	3.35	1.41	34.82	11.96	38.17	13.37	219.97
YDL149W	ATG9	1.03	1.44	1.64	2.05	2.22	2.34	3.95	1.52	38.20	19.72	42.15	21.24	295.36
YDL149W	ATG9	0.90	1.22	1.37	1.73	1.91	2.03	12.46	2.34	67.70	31.92	80.16	34.26	284.94
YDL151C	BUD30	0.90	1.16	1.21	1.46	1.75	2.01	9.86	1.77	59.33	24.99	69.19	26.75	291.72
YDL154W	MSH5	0.92	1.23	1.31	1.69	1.97	2.21	1.04	0.88	18.23	7.74	19.27	8.62	303.62
YDL155W	CLB3	0.91	1.27	1.46	1.78	1.94	2.09	17.76	8.54	70.83	49.21	88.59	57.75	345.32
YDL156W	YDL156w	0.95	1.32	1.48	1.84	2.02	2.17	17.28	8.86	70.05	48.93	87.33	57.79	339.07
YDL157C	YDL157c	0.99	1.41	1.59	1.98	2.15	2.28	14.87	5.03	72.25	41.20	87.12	46.23	335.04
YDL159W	STE7	1.00	1.35	1.48	1.84	2.05	2.20	8.73	2.90	54.58	30.85	63.31	33.74	337.71
YDL159W-A	YDL159w-a	0.99	1.33	1.47	1.86	2.01	2.15	21.08	13.60	74.88	51.47	95.96	65.07	332.31
YDL160C	DHH1	0.96	1.05	1.13	1.11	1.33	1.47	60.25	47.35	116.66	83.21	176.91	130.56	323.64
YDL160C-A	YDL160c-a	0.90	1.20	1.35	1.78	1.96	2.08	15.18	8.93	66.51	42.65	81.69	51.58	328.27
YDL161W	ENT1	0.96	1.34	1.50	2.15	2.23	2.27	22.66	12.18	76.22	61.01	98.88	73.19	370.53
YDL162C	YDL162c	1.00	1.43	1.58	2.00	2.19	2.31	0.88	1.79	10.50	23.44	11.39	25.23	284.70
YDL167C	NRP1	0.82	0.86	0.90	0.79	0.79	0.76	125.73	92.06	149.78	102.30	275.51	194.36	395.89
YDL168W	SFA1	0.99	1.38	1.56	1.97	2.16	2.32	1.64	1.19	22.17	14.00	23.82	15.20	291.14
YDL169C	UGX2	0.99	1.32	1.50	1.93	2.13	2.26	3.10	2.84	38.39	31.52	41.49	34.36	305.94
YDL170W	UGA3	0.98	1.33	1.47	1.84	2.03	2.17	4.43	4.55	43.54	36.94	47.97	41.49	312.37
YDL171C	GLT1	0.98	1.42	1.55	1.93	2.13	2.28	0.71	0.74	8.66	9.32	9.37	10.06	280.64
YDL172C	YDL172c	1.05	1.42	1.55	1.97	2.18	2.32	24.19	12.78	76.91	58.82	101.10	71.60	321.01
YDL173W	FAR32	1.01	1.42	1.61	1.90	2.07	2.22	9.70	5.05	56.07	41.29	65.77	46.34	323.02
YDL174C	DLD1	0.96	1.35	1.52	1.89	2.12	2.30	1.05	0.67	22.02	6.86	23.06	7.54	302.46
YDL175C	AIR2	1.05	1.49	1.65	2.00	2.18	2.31	3.79	1.69	39.90	23.27	43.69	24.96	315.22
YDL176W	YDL176w	0.97	1.31	1.46	1.80	1.98	2.14	12.97	6.53	62.15	47.66	75.12	54.20	350.81
YDL177C	YDL177c	0.98	1.35	1.50	1.87	2.04	2.18	14.76	6.69	65.47	48.86	80.23	55.55	346.40
YDL178W	DLD2	0.99	1.40	1.56	1.94	2.13	2.26	7.71	2.32	53.71	30.48	61.43	32.80	329.56
YDL179W	PCL9	0.99	1.35	1.49	1.90	2.14	2.31	0.59	0.72	3.00	4.23	3.59	4.94	280.86
YDL180W	YDL180w	0.98	1.39	1.54	1.93	2.12	2.26	7.49	4.84	53.74	43.13	61.24	47.97	320.66
YDL181W	INH1	0.95	1.10	1.08	0.95	0.96	0.93	123.32	125.42	135.40	131.32	258.72	256.74	532.32
YDL182W	LYS20	0.93	1.22	1.29	1.57	1.79	1.97	2.91	3.52	35.42	34.88	38.33	38.40	300.95
YDL183C	YDL183c	0.92	1.31	1.49	1.94	2.12	2.26	3.70	3.21	42.25	36.56	45.95	39.77	314.22
YDL184C	RPL41a	0.96	1.36	1.54	1.92	2.10	2.23	21.95	14.50	74.30	62.53	96.25	77.04	341.01
YDL185W	TFP1	0.97	1.10	1.16	1.40	1.73	1.94	26.30	13.65	93.06	59.24	119.36	72.89	329.09
YDL186W	YDL186w	0.99	1.42	1.59	1.95	2.12	2.23	10.18	3.01	57.20	32.20	67.38	35.21	347.50
YDL187C	YDL187c	0.92	1.26	1.40	1.77	2.00	2.20	5.48	2.38	46.03	25.43	51.51	27.81	331.03
YDL188C	PPH22	0.96	1.34	1.48	1.79	1.97	2.13	19.76	7.26	72.17	47.48	91.93	54.74	346.83
YDL189W	RBS1	1.00	1.35	1.50	1.87	2.07	2.19	49.62	44.28	105.43	102.15	155.06	146.42	358.79
YDL190C	UFD2	1.00	1.46	1.67	2.04	2.19	2.30	2.40	3.02	34.20	33.96	36.60	36.98	314.66
YDL191W	RPL35a	0.97	1.38	1.58	2.03	2.20	2.30	13.45	6.53	62.04	48.33	75.48	54.86	328.01
YDL192W	ARF1	0.95	1.21	1.32	1.62	1.89	2.10	17.31	12.35	74.65	68.82	91.96	81.17	332.54
YDL194W	SNF3	0.93	1.08	1.30	1.90	2.12	2.15	18.37	1.48	75.91	24.53	94.28	26.00	272.44

ORF.name	Strain	Optical density at 600 nm at regular intervals (h)						GLUCOSE		FRUCTOSE		TOTAL SUGARS (g/l)		TOTAL AMINO ACIDS (mg/L)
		0	26	33	48	59	78	102 h	118 h	102 h	118 h	102 h	118 h	102 h
YDL197C	ASF2	1.00	1.40	1.66	2.10	2.26	2.35	21.70	15.41	70.81	64.15	92.51	79.56	346.63
YDL198C	GGC1	0.92	1.24	1.34	1.76	1.96	2.07	6.71	1.60	54.61	24.30	61.32	25.90	209.79
YDL199C	YDL199c	0.97	1.37	1.55	1.97	2.14	2.24	23.56	10.47	78.01	60.49	101.57	70.95	341.81
YDL200C	MGT1	0.98	1.41	1.58	2.00	2.15	2.26	26.34	10.80	79.11	58.48	105.45	69.29	352.30
YDL201W	TRM8	0.93	1.31	1.45	1.91	2.10	2.22	29.90	18.66	83.58	68.72	113.48	87.38	352.00
YDL202W	MRPL11	0.88	0.96	0.98	0.88	0.89	0.85	121.75	122.80	144.55	110.34	266.30	233.14	429.91
YDL203C	ACK1	0.94	1.26	1.34	1.83	2.06	2.21	28.59	16.73	82.75	66.09	111.34	82.82	330.82
YDL204W	RTN2	0.96	1.25	1.33	1.82	2.04	2.20	11.49	12.16	61.16	60.98	72.65	73.14	315.06
YDL206W	YDL206w	0.96	1.36	1.54	1.90	2.02	2.04	4.00	1.21	40.16	5.08	44.16	6.28	285.84
YDL210W	UGA4	1.00	1.37	1.62	2.00	2.15	2.25	23.55	7.63	76.24	51.25	99.80	58.88	281.44
YDL211C	YDL211c	1.02	1.41	1.61	1.98	2.15	2.24	21.46	7.58	75.24	48.38	96.70	55.97	300.82
YDL213C	NOP6	1.02	1.43	1.63	2.01	2.18	2.30	21.33	9.40	74.89	55.44	96.22	64.84	333.35
YDL214C	PRR2	0.98	1.35	1.57	1.94	2.11	2.22	18.16	4.68	71.69	43.87	89.85	48.55	329.61
YDL215C	GDH2	0.98	1.34	1.51	1.93	2.11	2.25	21.49	9.40	74.86	58.30	96.36	67.70	312.93
YDL216C	RRI1	0.93	1.27	1.39	1.67	1.86	2.02	24.26	14.31	78.92	70.81	103.19	85.12	319.51
YDL218W	YDL218w	0.98	1.37	1.52	1.96	2.14	2.27	22.29	4.98	74.49	43.05	96.79	48.03	309.76
YDL219W	DTD1	0.93	1.27	1.37	1.78	1.97	2.11	25.90	9.95	76.23	56.61	102.13	66.56	294.87
YDL222C	FMP45	0.90	1.28	1.39	1.91	2.09	2.20	23.05	5.51	76.02	45.35	99.07	50.86	232.88
YDL223C	HBT1	0.89	1.20	1.32	1.78	1.98	2.13	26.94	10.61	79.00	56.35	105.94	66.96	236.65
YDL224C	WHI4	0.96	1.24	1.30	1.77	2.01	2.19	5.57	7.80	47.76	50.31	53.33	58.12	241.33
YDL225W	SHS1	0.94	1.20	1.33	1.68	1.90	2.07	36.53	19.34	89.97	72.17	126.50	91.51	319.14
YDL226C	GCS1	0.97	1.33	1.55	1.92	2.09	2.20	19.74	3.17	74.75	34.88	94.49	38.05	271.60
YDL227C	Ho	1.05	1.38	1.54	1.85	2.04	2.18	22.15	14.12	77.91	65.35	100.05	79.48	317.12
YDL229W	SSB1	1.02	1.39	1.57	1.93	2.12	2.25	15.57	2.88	65.58	32.48	81.15	35.37	332.98
YDL230W	PTP1	0.97	1.33	1.54	1.93	2.10	2.20	19.09	6.22	77.22	50.50	96.31	56.72	342.46
YDL231C	BRE4	1.03	1.40	1.63	2.07	2.24	2.34	13.77	5.62	65.79	45.65	79.57	51.27	321.31
YDL232W	OST4	0.98	1.38	1.58	2.00	2.17	2.28	21.88	11.97	77.53	63.05	99.41	75.02	339.49
YDL233W	YDL233w	0.95	1.31	1.45	1.81	2.00	2.14	27.67	7.02	83.90	50.70	111.58	57.72	353.17
YDL234C	GYP7	0.94	1.31	1.43	1.86	2.06	2.21	25.47	4.78	79.38	41.79	104.85	46.57	335.96
YDL236W	PHO13	0.96	1.36	1.53	2.01	2.19	2.29	22.31	4.15	74.13	38.68	96.44	42.83	344.34
YDL237W	AIM6	0.91	1.23	1.36	1.83	2.03	2.18	30.03	8.71	84.06	54.11	114.09	62.82	350.43
YDL238C	GUD1	1.01	1.32	1.44	2.11	2.12	2.10	7.72	7.89	53.26	50.40	60.98	58.29	308.08
YDL239C	ADY3	0.95	1.33	1.54	1.94	2.10	2.20	26.77	15.37	79.98	64.18	106.75	79.55	307.86
YDL240W	LRG1	1.02	1.42	1.67	2.08	2.23	2.31	38.12	16.37	91.51	68.02	129.63	84.39	322.84
YDL241W	YDL241w	0.99	1.33	1.50	1.85	2.04	2.15	15.56	7.62	70.32	50.26	85.88	57.87	236.81
YDL242W	YDL242w	1.01	1.47	1.72	2.08	2.22	2.30	17.68	6.82	68.87	47.87	86.54	54.69	280.88
YDL243C	AAD4	1.02	1.49	1.74	2.11	2.25	2.33	23.96	8.18	75.24	51.58	99.20	59.76	320.61
YDR001C	NTH1	1.07	1.52	1.77	2.14	2.28	2.36	9.71	6.63	55.48	46.53	65.19	53.16	317.63
YDR003W	RCR2	0.99	1.41	1.58	1.95	2.12	2.23	6.58	2.72	50.37	32.82	56.96	35.54	316.93
YDR003W-A	YDR003w-a	0.87	1.18	1.30	1.58	1.77	1.93	10.65	3.48	59.23	29.27	69.88	32.74	300.97
YDR004W	RAD57	1.01	1.34	1.45	1.80	2.00	2.16	20.03	11.92	76.19	64.14	96.22	76.06	316.98
YDR005C	MAF1	0.91	1.22	1.34	1.71	1.90	2.06	22.36	4.16	75.38	38.58	97.74	42.74	295.43
YDR006C	SOK1	0.93	1.29	1.45	1.87	2.03	2.15	28.66	8.49	81.90	54.07	110.56	62.55	284.39
YDR007W	TRP1	0.88	1.18	1.30	1.62	1.83	1.99	3.36	5.35	35.29	40.72	38.65	46.06	304.93
YDR008C	YDR008c	0.90	1.23	1.34	1.70	1.91	2.06	11.28	1.74	57.07	19.13	68.35	20.87	312.35
YDR009W	GAL3	0.99	1.34	1.46	1.96	2.16	2.29	6.26	3.40	48.58	36.96	54.84	40.35	294.79
YDR010C	YDR010c	0.97	1.40	1.62	2.02	2.18	2.26	29.59	19.84	82.89	71.98	112.48	91.83	308.34
YDR011W	SNQ2	0.98	1.36	1.61	2.04	2.20	2.28	29.39	18.10	83.45	67.96	112.85	86.06	351.67
YDR014W	RAD61	1.07	1.47	1.65	2.06	2.22	2.31	28.17	13.50	83.48	62.31	111.65	75.80	350.67
YDR015C	YDR015c	1.03	1.53	1.75	2.13	2.26	2.32	13.47	4.21	64.04	41.24	77.51	45.46	323.63
YDR017C	KCS1	1.03	1.49	1.61	1.95	2.10	2.18	44.14	24.52	92.10	75.64	136.24	100.16	364.58
YDR018C	YDR018c	0.98	1.39	1.57	2.02	2.17	2.25	11.31	1.57	59.61	25.12	70.92	26.69	310.30
YDR019C	GCV1	1.00	1.42	1.57	1.98	2.16	2.25	11.64	2.64	59.63	33.65	71.27	36.29	292.71
YDR020C	DAS2	0.95	1.39	1.55	1.97	2.13	2.24	2.14	1.55	30.56	26.21	32.71	27.76	283.17
YDR022C	CIS1	0.95	1.32	1.53	2.02	2.19	2.30	13.72	4.58	65.61	43.40	79.32	47.98	311.50
YDR024W	FYV1	0.94	1.25	1.32	1.78	2.03	2.05	37.76	8.25	93.89	56.59	131.66	64.84	297.96
YDR025W	RPS11a	0.87	1.22	1.31	1.69	1.92	2.05	27.54	13.07	78.33	59.23	105.87	72.29	296.37
YDR026C	YDR026c	0.93	1.38	1.52	1.92	2.09	2.16	9.05	0.94	58.57	16.95	67.62	17.89	217.75
YDR027C	VPS54	0.90	1.32	1.46	1.87	1.99	2.04	16.80	6.37	72.97	49.86	89.77	56.24	244.75
YDR028C	REG1	0.89	1.27	1.34	1.76	1.93	2.03	47.22	41.56	113.16	116.53	160.38	158.10	288.72
YDR029W	YDR029w	0.89	1.30	1.41	1.83	1.98	2.08	13.52	4.51	64.48	42.39	78.00	46.89	232.29
YDR030C	RAD28	0.90	1.35	1.51	1.96	2.11	2.22	9.85	0.72	59.02	4.17	68.87	4.89	233.39
YDR031W	MIC14	0.86	1.31	1.47	1.88	2.03	2.11	10.47	0.77	61.78	10.24	72.25	11.00	201.56
YDR032C	PST2	0.90	1.36	1.52	1.93	2.08	2.16	4.34	0.60	39.11	8.22	43.45	8.82	154.09
YDR033W	MRH1	0.92	1.37	1.55	1.97	2.13	2.20	2.92	0.58	36.32	9.70	39.24	10.28	134.89
YDR034C	LYS14	0.88	1.33	1.48	1.87	2.03	2.10	14.07	2.28	64.25	29.89	78.32	32.17	144.63
YDR034W-B	YDR034w-b	0.83	1.11	1.19	1.49	1.69	1.86	13.67	5.10	64.89	33.26	78.56	38.35	314.25
YDR035W	ARO3	0.90	1.32	1.49	1.92	2.07	2.16	14.90	6.57	68.60	48.50	83.50	55.06	146.50
YDR036C	EHD3	0.81	1.11	1.23	1.61	1.78	1.89	12.21	2.66	62.77	36.12	74.98	38.78	150.44
YDR042C	YDR042c	0.90	1.27	1.44	1.82	2.01	2.13	2.27	1.22	32.37	6.03	34.63	7.25	250.29
YDR043C	NRG1	1.04	1.54	1.68	1.96	2.10	2.14	49.49	32.28	103.40	86.94	152.89	119.21	222.01
YDR046C	BAP3	0.92	1.35	1.47	1.88	2.07	2.15	4.14	3.34	45.29	37.67	49.43	41.02	184.11
YDR048C	YDR048c	1.00	1.09	1.19	1.68	1.93	2.20	26.60	1.82	83.44	34.23	110.04	36.05	269.10
YDR049W	YDR049w	0.90	1.10	1.31	1.84	2.02	2.16	2.94	0.17	40.09	7.41	43.03	7.58	312.39
YDR050C	TPI1	0.90	1.07	1.19	1.70	1.87	2.04	18.85	9.71	64.79	53.74	83.64	63.45	366.88
YDR051C	DET1	0.86	1.18	1.37	1.73	1.88	2.04	1.43	1.66	12.51	14.84	13.94	16.50	268.68
YDR055W	PST1	0.94	1.15	1.32	1.86	2.06	2.21	2.42	1.79	39.65	31.47	42.07	33.26	304.85
YDR056C	YDR056c	0.88	1.09	1.27	1.80	2.00	2.15	0.62	0.12	25.55	14.37	26.17	14.49	303.95
YDR057W	YOS9	0.94	1.20	1.42	1.94	2.11	2.25	7.04	1.09	52.98	26.59	60.01	27.68	308.98
YDR058C	TGL2	0.86	1.02	1.22	1.64	1.84	2.01	7.47	2.24	49.37	28.43	56.84	30.67	308.07
YDR059C	UBC5	0.91	1.20	1.40	1.92	2.11	2.24	10.83	1.22	59.71	29.14	70.54	30.36	316.20
YDR061W	YDR061w	0.90	1.07	1.23	1.77	2.01	2.19	0.02	-0.05	6.07	0.52	6.09	0.47	277.57
YDR063W	AIM7	0.89	1.03	1.14	1.67	1.90	2.08	10.39	1.19	64.04	29.31	75.73	30.50	314.61
YDR065W	RRG1	1.05	1.12	1.10	1.13	1.14	1.14	123.85	135.51	128.02	133.77	251.87	269.28	539.79
YDR066C	RTR2	0.94	1.13	1.30	1.80	2.00	2.18	0.33	0.06	18.33	9.66	18.66	9.72	299.38
YDR067C	OCA6	0.89	1.23	1.43	1.81	2.00	2.12	1.28	1.34	10.43	3.81	11.71	5.15	245.08
YDR068W	DOS2	1.05	1.41	1.68	2.09	2.21	2.32	9.40	5.05	53.63	44.05	63.03	49.10	313.69
YDR069C	DOA4	0.89	1.07	1.13	1.31	1.48	1.58	19.09	3.93	83.75	51.10	102.84	55.03	347.06
YDR070C	FMP16	0.96	1.27	1.51	1.95	2.12	2.26	3.55	1.73	38.86	26.57	42.41	28.30	292.03
YDR071C	PAA1	0.84	0.99	1.18	1.77	1.99	2.17	1.40	1.10	23.17	16.75	24.57	17.85	269.77
YDR072C	IPT1	0.99	1.42	1.64	1.99	2.09	2.22	11.68	2.96	55.24	33.23	66.92	36.19	324.79
YDR073W	SNF11	0.98	1.34	1.55	1.99	2.14	2.28	2.07	1.84	34.60	14.68	36.67	16.52	291.83
YDR074W	TPS2	0.92	1.09	1.25	1.59	1.72	1.80	37.78	35.29	120.24	119.96	158.02	155.25	301.28
YDR075W	PPH3	0.99	1.39	1.63	2.05	2.18	2.30	1.49	1.34	27.24	20.72	28.73	22.05	285.34
YDR076W	RAD55	1.02	1.33	1.44	1.80	1.96	2.12	5.50	3.05	44.41	32.46	49.91	35.50	312.24
YDR077W	SED1	1.01	1.42	1.64	2.07	2.21	2.32	4.69	2.44	41.04	31.54	45.72	33.98	309.58
YDR078C	SHU2	1.02	1.12	1.09	1.13	1.13	1.13	120.55	119.25	119.84	119.31	240.39	238.56	528.09
YDR079C-A	TFB5	0.86	1.19	1.27	1.51	1.70	1.90	10.92	9.49	60.52	52.87	71.44	62.36	318.07
YDR079W	PET100	0.94	1.03	0.99	1.04	1.05	1.03	120.08	115.67	122.15	118.93	242.24	234.60	533.86
YDR080W	VPS41	0.97	1.19	1.30	1.69	1.87	2.00	43.16	29.43	95.62	88.06	138.78	117.49	416.54
YDR083W	RRP8	1.01	1.20	1.34	1.88	2.09	2.27	20.39	10.47	69.55	54.75	89.95	65.23	343.98
YDR084C	TVP23	0.97	1.29	1.54	1.96	2.12	2.25	13.29	10.14	56.02	50.06	69.31	60.19	334.69
YDR085C	AFR1	0.97	1.29	1.53	1.96	2.13	2.27	9.62	3.18	54.01	34.57	63.63	37.75	336.06
YDR089W	YDR089w	0.98	1.30	1.51	1.89	2.05	2.18	17.15	11.46	64.76	53.33	81.91	64.78	339.65
YDR090C	YDR090c	0.99	1.31	1.49	1.90	2.06	2.20	15.12	9.43	63.64	49.07	78.76	58.49	332.30
YDR090C	YDR090c	0.96	1.35	1.55	1.92	2.09	2.22	4.40	0.80	40.51	6.74	44.91	7.54	274.74
YDR092W	UBC13	1.00	1.31	1.50	2.00	2.19	2.34	0.11	0.18	7.16	1.70	7.27	1.88	263.98
YDR092W	UBC13	0.93	1.24	1.34	1.69	1.92	2.13	1.27	0.85	5.56	2.15	6.82	3.00	229.29
YDR093W	DNF2	1.02	1.31	1.49	1.89	2.08	2.20	15.66	7.34	64.26	45.26	79.92	52.61	332.28
YDR094W	YDR094w	0.97	1.28	1.50	1.94	2.10	2.22	5.60	5.84	45.14	42.60	50.75	48.44	300.13
YDR095C	YDR095c	0.94	1.24	1.43	1.89	2.06	2.20	2.04	3.91	30.04	33.28	32.08	37.19	297.73
YDR096W	GIS1	0.94	1.16	1.32	1.79	2.01	2.15	2.10	3.80	27.89	34.21	30.00	38.01	278.74
YDR097C	MSH6	0.92	1.08	1.16	1.62	1.90	2.06	7.73	2.94	47.97	29.61	55.70	32.55	330.29
YDR098C	GRX3	0.94	1.17	1.37	1.90	2.09	2.20	10.51	3.59	56.32	36.97	66.83	40.56	319.91
YDR099W	BMH2	1.06	1.46	1.70	2.08	2.21	2.34	10.89	3.72	55.17	37.25	66.06	40.97	330.59
YDR100W	TVP18	0.94	1.23	1.46	1.91	2.08	2.22	11.75	7.21	53.60	46.63	65.35	53.85	329.97
YDR101C	ARX1	0.97	1.21	1.38	1.82	1.98	2.14	7.93	6.63	54.54	45.46	62.47	52.09	299.83
YDR102C	YDR102c	0.96	1.31	1.54	1.94	2.10	2.23	14.50	8.81	61.39	50.72	75.89	59.54	327.42
YDR103W	STE5	1.01	1.47	1.70	2.06	2.19	2.30	6.55	2.66	45.05	29.37	51.60	32.03	303.24
YDR104C	SPO71	1.02	1.35	1.58	2.04	2.19	2.31	8.81	8.16	52.67	42.98	61.48	51.14	308.74
YDR105C	TMS1	1.05	1.40	1.57	1.98	2.17	2.32	0.47	0.16	15.32	2.71	15.78	2.87	283.50
YDR107C	TMN2	1.00	1.30	1.46	1.84	2.00	2.12	14.44	6.64	59.74	46.07	74.18	52.71	324.32
YDR108W	GSG1	0.98	1.26	1.42	1.82	1.97	2.08	15.29	9.29	62.72	51.90	78.01	61.18	324.34
YDR109C	YDR109c	0.96	1.31	1.51	1.93	2.11	2.23	3.67	1.09	37.78	21.75	41.45	22.84	312.69
YDR110W	FOB1	0.96	1.24	1.42	1.93	2.09	2.21	13.54	8.47	61.22	48.87	74.76	57.34	320.86
YDR111C	ALT2	0.98	1.29	1.52	2.04	2.19	2.28	11.34	4.39	56.98	40.35	68.31	44.74	322.07
YDR112W	YDR112w	1.08	1.40	1.65	2.05	2.20	2.31	8.67	7.30	53.98	47.71	62.65	55.01	309.85
YDR114C	YDR114c	1.03	1.10	1.08	1.16	1.37	1.67	40.25	27.55	90.97	76.05	131.22	103.59	329.99
YDR115W	YDR115w	0.93	1.13	1.27	1.66	1.83	1.97	15.99	10.42	61.68	54.09	77.67	64.51	321.60
YDR116C	MRPL1	0.96	1.26	1.48	1.93	2.09	2.23	6.18	4.68	45.29	36.43	51.47	41.11	295.54
YDR117C	TMA64	0.98	1.25	1.39	1.83	1.99	2.15	20.20	10.05	69.36	52.02	89.55	62.07	338.38
YDR119W	VBA4	0.98	1.28	1.50	1.98	2.14	2.25	14.16	8.44	62.01	48.21	76.17	56.66	327.92
YDR120C	TRM1	1.01	1.35	1.54	1.94	2.10	2.21	9.62	6.80	52.67	45.48	62.29	52.28	319.39
YDR121W	DPB4	0.96	1.23	1.38	1.87	2.07	2.21	1.81	0.44	31.19	15.57	33.00	16.01	300.49

ORF.name	Strain	Optical density at 600 nm at regular intervals (h)						GLUCOSE		FRUCTOSE		TOTAL SUGARS (g/l)		TOTAL AMINO ACIDS (mg/L)
		0	26	33	48	59	78	102 h	118 h	102 h	118 h	102 h	118 h	102 h
YDR122W	KIN1	0.97	1.28	1.50	2.00	2.16	2.29	1.65	0.72	25.55	17.38	27.20	18.10	280.31
YDR123C	INO2	0.82	0.90	0.86	0.90	0.92	0.89	122.29	119.20	124.07	120.08	246.36	239.29	533.74
YDR123C	INO2	0.87	1.04	1.03	0.92	0.97	1.14	46.17	15.31	99.48	71.22	145.65	86.53	300.99
YDR124W	YDR124w	0.88	1.16	1.33	1.78	1.85	2.00	1.23	1.20	3.71	0.79	4.94	1.99	244.96
YDR125C	ECM18	0.94	1.18	1.34	1.84	2.07	2.22	0.57	0.07	0.84	-0.79	1.41	-0.72	267.42
YDR126W	SWF1	1.01	1.32	1.52	1.93	2.04	2.18	23.21	17.62	70.06	62.48	93.27	80.10	340.62
YDR127W	ARO1	0.96	1.11	1.15	1.03	1.13	1.32	108.98	102.86	141.08	142.05	250.06	244.91	470.18
YDR128W	MTC5	0.98	1.30	1.49	1.87	2.04	2.17	25.30	16.37	74.66	64.31	99.97	80.68	365.49
YDR129C	SAC6	0.94	1.22	1.41	1.90	2.08	2.21	13.82	7.59	60.70	48.25	74.52	55.83	332.85
YDR130C	FIN1	0.97	1.21	1.39	1.86	2.02	2.18	9.79	7.14	49.39	41.57	59.17	48.71	309.01
YDR131C	YDR131c	0.99	1.37	1.62	2.05	2.19	2.31	6.53	7.55	46.71	49.45	53.24	57.00	307.26
YDR132C	YDR132c	1.01	1.41	1.60	2.05	2.16	2.28	10.27	8.06	58.04	49.58	68.31	57.64	316.83
YDR133C	YDR133c	0.95	1.26	1.43	1.86	2.05	2.19	0.77	0.14	18.75	8.46	19.52	8.60	290.81
YDR134C	YDR134c	0.99	1.29	1.49	1.95	2.11	2.24	14.75	3.87	62.13	36.09	76.88	39.96	322.12
YDR135C	YCF1	0.90	1.07	1.14	1.52	1.71	1.84	17.69	5.65	68.58	45.98	86.27	51.63	341.02
YDR136C	VPS61	0.99	1.24	1.39	1.86	2.03	2.12	10.91	2.61	64.00	33.07	82.91	35.67	343.41
YDR137W	RGP1	0.97	1.16	1.32	1.84	2.11	2.26	0.53	0.10	17.34	1.37	17.87	1.47	300.27
YDR138W	HPR1	0.92	1.14	1.13	1.00	1.02	1.05	108.08	89.17	132.77	121.80	240.85	210.97	445.92
YDR138W	HPR1	0.84	1.06	1.05	1.03	1.21	1.35	29.77	12.71	83.74	59.62	113.51	72.33	353.69
YDR139C	RUB1	0.98	1.27	1.47	1.87	2.02	2.16	17.52	6.93	66.97	47.29	84.49	54.22	341.47
YDR140W	MTQ2	1.01	1.35	1.57	1.96	2.10	2.23	16.08	4.32	63.30	40.87	79.39	45.19	343.68
YDR142C	PEX7	0.99	1.23	1.39	1.80	1.99	2.14	8.72	5.71	52.60	42.19	61.32	47.90	307.49
YDR143C	SAN1	1.03	1.41	1.64	2.08	2.22	2.34	15.28	9.84	67.30	57.01	82.58	66.85	309.55
YDR144C	MKC7	0.97	1.17	1.34	1.93	2.15	2.30	3.15	1.98	36.87	30.18	40.02	32.16	304.16
YDR146C	SWI5	1.00	1.37	1.58	2.02	2.23	2.34	0.80	0.72	23.35	16.97	24.14	17.69	286.61
YDR147W	EKI1	1.02	1.22	1.38	1.94	2.11	2.26	9.41	7.61	54.30	49.12	63.72	56.72	289.93
YDR147W	EKI1	0.99	1.35	1.52	1.93	2.09	2.23	2.85	1.02	32.47	7.16	35.32	8.18	271.60
YDR148C	KGD2	1.04	1.12	1.10	1.07	1.10	1.32	103.46	95.51	125.26	122.74	228.72	218.25	424.10
YDR149C	YDR149c	1.02	1.21	1.31	1.68	1.87	2.07	34.15	14.98	83.62	62.99	117.77	77.98	326.94
YDR150W	NUM1	1.08	1.47	1.66	2.01	2.16	2.32	7.41	1.38	49.40	16.39	56.81	17.78	282.54
YDR151C	CTH1	0.93	1.18	1.39	1.86	2.02	2.18	10.82	1.80	58.43	22.86	69.25	24.66	313.78
YDR152W	GIR2	1.03	1.27	1.47	1.90	2.06	2.23	5.32	2.33	44.23	27.76	49.56	30.09	249.78
YDR153C	ENT5	0.91	1.12	1.29	1.85	1.80	2.05	2.96	1.10	35.95	10.39	38.91	11.49	252.96
YDR154C	YDR154c	1.08	1.37	1.52	1.91	2.08	2.22	2.76	1.12	38.93	13.31	41.69	14.43	288.47
YDR155C	CPR1	0.91	1.12	1.26	1.71	1.89	2.08	2.40	1.15	34.78	12.86	37.18	14.02	290.35
YDR156W	RPA14	1.02	1.24	1.35	1.81	2.02	2.21	9.82	2.38	57.36	30.34	67.19	32.73	258.45
YDR157W	YDR157w	0.97	1.30	1.50	1.75	2.00	2.14	3.59	1.77	39.71	17.17	43.30	18.94	272.52
YDR158W	HOM2	0.87	1.09	1.08	1.12	1.38	1.60	33.82	19.71	85.69	67.30	119.51	87.01	331.29
YDR159W	SAC3	0.96	1.18	1.16	1.12	1.30	1.47	79.29	61.05	119.63	112.81	198.92	173.85	401.48
YDR159W	SAC3	0.82	1.01	0.99	0.87	0.99	1.17	67.49	51.31	104.89	94.68	172.38	145.99	394.14
YDR161W	YDR161w	0.98	1.18	1.27	1.70	1.91	2.10	17.45	13.78	70.33	62.45	87.79	76.22	313.97
YDR162C	NBP2	1.09	1.53	1.80	2.18	2.29	2.37	14.21	5.07	60.70	38.53	74.91	43.61	327.47
YDR163W	CWC15	0.95	1.21	1.42	1.90	2.07	2.25	7.52	1.25	48.92	11.57	56.43	12.81	314.80
YDR165W	TRM82	1.04	1.36	1.55	2.01	2.17	2.31	16.47	3.71	66.07	36.20	82.54	39.91	302.31
YDR169C	STB3	0.91	1.04	1.14	1.55	1.72	1.92	8.88	2.75	55.31	33.43	64.19	36.19	283.91
YDR169C-A	YDR169c-a	0.92	1.22	1.46	1.85	2.05	2.18	9.81	4.57	56.78	32.09	66.59	36.66	308.32
YDR171W	HSP42	0.90	1.09	1.21	1.77	1.79	1.99	3.55	1.33	36.61	15.36	40.16	16.69	273.17
YDR173C	ARG82	0.93	1.32	1.40	1.84	2.00	2.16	1.31	1.14	12.95	3.42	14.25	4.56	246.83
YDR174W	HMO1	0.86	0.90	0.93	1.11	1.34	1.59	57.35	43.36	98.60	90.77	155.95	134.14	299.43
YDR175C	RSM24	0.88	1.05	1.06	0.91	0.90	0.86	127.20	37.90	142.85	100.36	270.04	138.26	517.85
YDR176W	NGG1	0.94	1.07	1.08	1.35	1.51	1.73	38.63	22.99	94.29	77.44	132.93	100.43	363.21
YDR178W	SDH4	0.92	1.13	1.27	1.71	1.89	2.09	2.41	4.18	26.22	38.07	30.63	42.25	273.46
YDR179C	CSN9	0.98	1.15	1.27	1.80	2.00	2.20	11.02	10.80	58.70	55.32	69.72	66.12	294.54
YDR179W-A	YDR179w-a	0.90	1.11	1.23	1.73	1.92	2.10	4.40	2.26	41.46	28.76	45.86	31.03	284.33
YDR179W-A	YDR179w-a	0.99	1.31	1.49	1.87	2.05	2.20	2.93	0.95	32.48	5.38	35.41	6.33	267.98
YDR181C	SAS4	0.96	1.13	1.20	1.57	1.78	2.01	30.92	19.80	77.09	66.76	108.01	86.56	334.58
YDR182W-A	YDR182w-a	0.91	1.20	1.37	1.75	1.96	2.12	7.74	5.20	51.46	32.67	59.20	37.86	293.76
YDR183W	PLP1	1.07	1.43	1.64	2.08	2.22	2.33	13.39	2.97	62.00	31.89	75.39	34.87	311.74
YDR184C	ATC1	1.08	1.34	1.48	1.90	2.07	2.22	23.77	5.68	79.20	44.13	102.97	49.81	329.81
YDR185C	UPS3	1.05	1.39	1.58	1.99	2.14	2.26	21.30	4.38	74.10	40.13	95.39	44.50	333.27
YDR186C	YDR186c	0.94	1.11	1.22	1.54	1.79	2.02	0.95	1.12	2.75	0.51	3.70	1.63	257.64
YDR191W	HST4	0.90	1.10	1.21	1.61	1.78	2.00	3.15	1.35	34.57	13.85	37.72	15.21	288.47
YDR192C	NUP42	0.91	1.10	1.21	1.63	1.82	2.02	1.23	0.99	10.25	3.75	11.48	4.74	273.43
YDR193W	YDR193w	0.92	1.14	1.24	1.63	1.80	1.98	1.86	1.14	23.84	9.63	25.70	10.77	271.86
YDR194C	MSS116	0.93	1.11	1.12	0.99	0.98	0.94	128.82	123.32	141.69	142.55	270.51	265.87	517.57
YDR194W-A	YDR194w-a	0.88	1.15	1.33	1.69	1.91	2.04	9.61	1.91	57.90	18.00	67.52	19.90	309.31
YDR195W	REF2	1.02	1.12	1.15	1.58	1.83	2.07	23.47	20.65	82.49	73.24	105.96	93.88	264.99
YDR197W	CBS2	0.89	1.06	1.08	0.94	0.92	0.88	72.01	38.15	123.47	97.37	195.48	135.52	317.69
YDR198C	RKM2	0.94	1.15	1.28	1.78	1.96	2.14	7.10	3.31	49.61	35.36	56.70	38.67	281.56
YDR199W	YDR199w	0.90	1.08	1.20	1.60	1.81	2.00	25.05	11.08	77.85	57.94	102.90	69.02	326.26
YDR200C	VPS64	1.08	1.22	1.25	1.50	1.66	1.86	21.89	12.12	77.57	65.13	99.46	77.25	278.29
YDR202C	RAV2	0.90	1.09	1.30	1.75	1.88	1.99	37.79	30.97	87.19	82.27	124.98	113.24	308.66
YDR203W	YDR203w	1.10	1.47	1.70	2.09	2.20	2.29	43.96	27.17	98.22	80.81	142.17	107.98	355.15
YDR204W	COQ4	0.82	0.98	0.99	0.84	0.84	0.81	128.52	129.81	133.20	140.36	261.72	270.17	519.64
YDR205W	MSC2	0.94	1.16	1.39	1.84	2.03	2.19	15.74	9.30	62.62	50.92	78.35	60.22	328.76
YDR206W	EBS1	1.00	1.26	1.45	1.91	2.07	2.22	16.28	4.64	69.03	40.18	85.31	44.82	317.42
YDR207C	UME6	0.96	1.13	1.20	1.55	1.72	1.93	14.92	4.38	67.19	39.98	82.11	44.37	324.91
YDR209C	YDR209c	0.97	1.22	1.40	1.88	2.05	2.22	1.48	1.10	17.77	5.22	19.26	6.32	247.81
YDR210W	YDR210w	1.01	1.37	1.58	2.04	2.18	2.29	3.63	1.14	37.09	9.33	40.73	10.47	276.52
YDR213W	UPC2	1.05	1.45	1.66	2.05	2.19	2.31	1.31	1.32	17.95	12.83	19.26	14.16	281.41
YDR214W	AHA1	0.93	1.10	1.24	1.70	1.91	2.09	1.59	1.48	21.31	18.15	22.90	19.63	283.95
YDR215C	YDR215c	1.01	1.27	1.41	1.86	2.03	2.21	5.50	3.30	44.36	33.40	49.86	36.70	287.11
YDR216W	ADR1	0.96	1.16	1.29	1.75	1.93	2.11	9.64	4.46	56.80	38.69	66.45	43.15	300.96
YDR217C	RAD9	0.92	1.12	1.26	1.72	1.92	2.07	21.31	9.52	66.63	49.25	87.94	58.77	344.15
YDR218C	SPR28	1.07	1.42	1.63	2.05	2.21	2.33	15.59	8.49	65.45	52.54	81.04	61.02	316.52
YDR219C	MFB1	0.98	1.24	1.44	1.96	2.14	2.30	14.45	4.14	62.71	36.75	77.15	40.89	289.70
YDR220C	YDR220c	1.03	1.39	1.59	2.03	2.17	2.28	11.91	3.74	60.01	37.51	71.92	41.25	315.54
YDR221W	GTB1	1.03	1.40	1.65	2.12	2.26	2.38	1.52	0.93	22.49	4.97	24.00	5.90	281.59
YDR222W	YDR222w	0.96	1.20	1.34	1.81	2.00	2.17	5.61	1.00	42.58	7.93	48.20	8.94	262.92
YDR223W	CRF1	1.00	1.42	1.63	2.07	2.22	2.35	1.08	1.12	2.10	0.54	3.18	1.66	259.23
YDR225W	HTA1	0.98	1.26	1.41	1.89	2.09	2.27	1.48	0.88	21.84	4.53	23.31	5.41	280.60
YDR226W	ADK1	0.97	1.20	1.33	1.76	1.96	2.17	0.99	1.27	3.74	4.44	4.73	5.71	261.42
YDR227W	SIR4	1.00	1.33	1.54	2.04	2.20	2.34	1.28	1.10	17.08	17.04	18.36	18.14	274.97
YDR229W	IVY1	1.02	1.28	1.51	2.02	2.18	2.30	6.89	4.97	46.68	39.67	53.56	44.64	270.83
YDR230W	YDR230w	0.88	1.05	1.05	0.91	0.91	0.88	129.52	128.19	145.61	147.58	275.14	275.77	515.80
YDR231C	COX20	0.98	1.07	1.04	1.06	1.08	1.02	122.08	116.27	125.83	118.71	247.90	234.98	513.74
YDR233C	RTN1	1.06	1.37	1.54	2.00	2.16	2.28	23.91	15.43	79.04	61.70	102.95	77.13	329.76
YDR234W	LYS4	0.93	1.17	1.31	1.65	1.85	2.00	1.54	1.24	22.90	4.11	24.44	5.35	296.34
YDR237W	MRPL7	1.02	1.11	1.07	1.13	1.32	1.75	41.75	24.78	95.96	75.07	137.71	99.85	294.89
YDR239C	YDR239c	0.94	1.17	1.27	1.66	1.83	2.00	15.27	3.44	66.18	34.21	81.46	37.65	311.18
YDR241W	BUD26	0.97	1.19	1.31	1.87	2.10	2.26	5.20	1.14	43.66	9.43	48.86	10.56	264.99
YDR242W	AMD2	0.93	1.13	1.28	1.68	1.89	2.10	13.50	2.99	58.03	29.90	71.54	32.89	322.69
YDR244W	PEX5	0.94	1.42	1.52	1.89	2.03	2.14	9.94	5.89	50.39	34.26	60.33	40.15	301.86
YDR245W	MNN10	0.96	1.05	1.13	1.42	1.66	1.84	3.72	0.41	39.67	8.83	43.39	9.23	271.65
YDR246W-A	YDR246w-a	0.98	1.32	1.51	1.93	2.09	2.20	15.00	2.99	70.61	29.00	85.61	31.99	324.31
YDR247W	VHS1	0.92	1.31	1.42	1.83	1.99	2.09	19.16	15.93	64.28	57.61	83.45	73.54	327.05
YDR248C	YDR248c	0.99	1.35	1.41	1.86	2.06	2.20	7.34	5.46	43.44	31.96	50.79	37.42	313.47
YDR249C	YDR249c	0.91	1.33	1.40	1.64	1.83	1.97	20.54	16.73	63.16	56.54	83.70	73.27	357.27
YDR250C	YDR250c	0.98	1.41	1.51	1.90	2.08	2.21	26.10	17.73	73.30	59.95	99.40	77.69	354.93
YDR251W	PAM1	0.95	1.40	1.49	1.81	2.00	2.15	9.64	6.86	49.14	38.98	58.78	45.84	320.21
YDR252W	BTT1	0.94	1.32	1.42	1.78	1.97	2.09	21.45	7.33	65.91	41.83	87.36	49.16	341.72
YDR253C	MET32	0.96	1.33	1.39	1.80	1.99	2.13	20.02	5.24	64.24	35.11	84.26	40.34	335.23
YDR254W	CHL4	0.96	1.31	1.28	1.46	1.70	1.90	42.89	31.28	86.22	79.43	129.11	110.71	374.33
YDR255C	RMD5	1.00	1.49	1.53	1.94	2.09	2.20	12.18	7.92	53.69	42.79	65.87	50.71	313.93
YDR256C	CTA1	0.91	1.31	1.30	1.74	1.94	2.08	18.59	13.16	63.68	54.78	82.26	67.94	335.75
YDR257C	RKM4	0.88	1.28	1.22	1.56	1.80	1.99	17.26	8.62	62.88	46.96	80.14	55.58	331.91
YDR258C	HSP78	0.90	1.36	1.47	1.91	2.07	2.18	16.07	7.42	57.73	41.17	73.80	48.59	337.64
YDR259C	YAP6	0.98	1.38	1.43	1.93	2.13	2.26	21.89	10.57	65.74	47.30	87.64	57.87	349.09
YDR260C	SWM1	0.82	1.10	1.01	0.96	0.99	0.84	111.73	109.38	122.12	119.00	233.85	228.38	463.00
YDR261C	EXG2	0.94	1.50	1.49	1.94	2.12	2.26	4.18	6.23	28.53	37.53	32.72	43.76	293.23
YDR262W	YDR262w	0.92	1.46	1.46	1.95	2.14	2.24	8.21	5.20	45.11	29.91	53.32	35.11	296.06
YDR263C	DIN7	0.95	1.51	1.64	2.07	2.21	2.31	6.75	9.88	41.06	47.67	47.81	57.55	305.25
YDR264C	AKR1	0.92	1.46	1.55	1.97	2.12	2.21	6.32	9.48	40.84	49.07	47.17	58.55	301.05
YDR265W	PEX10	0.95	1.45	1.59	2.03	2.17	2.28	10.55	6.22	54.66	36.18	65.21	42.39	297.78
YDR266C	YDR266c	0.91	1.50	1.53	1.94	2.11	2.23	3.60	4.09	24.75	22.25	28.35	26.34	289.64
YDR268W	MSW1	0.93	1.01	1.03	0.93	0.94	0.90	124.39	128.37	145.62	114.22	270.01	242.60	428.03
YDR269C	YDR269c	0.96	1.55	1.65	1.98	2.11	2.20	12.30	6.64	54.81	38.33	67.11	44.98	330.67
YDR270W	CCC2	0.92	1.51	1.64	2.03	2.15	2.24	5.84	7.00	38.55	36.54	44.39	43.54	309.37
YDR271C	YDR271c	0.91	1.48	1.54	1.94	2.08	2.18	7.31	5.72	45.30	34.76	52.60	40.48	317.63
YDR272W	GLO2	0.95	1.51	1.63	2.04	2.18	2.25	7.64	4.44	45.31	26.73	52.95	31.17	308.54
YDR273W	DON1	1.04	1.63	1.72	2.13	2.27	2.35	5.36	3.22	35.71	16.76	41.07	19.98	297.33
YDR274C	YDR274c	0.96	1.52	1.50	1.97	2.15	2.26	3.66	4.11	27.06	27.07	30.72	31.18	297.33
YDR275W	BSC2	0.93	1.52	1.59	1.94	2.09	2.22	3.01	3.28	14.70	15.30	17.71	18.59	283.71
YDR276C	PMP3	0.93	1.48	1.62	2.01	2.12	2.22	8.17	11.53	47.37	51.10	55.54	62.63	313.17

ORF.name	Strain	Optical density at 600 nm at regular intervals (h)						GLUCOSE		FRUCTOSE		TOTAL SUGARS (g/l)		TOTAL AMINO ACIDS (mg/L)
		0	26	33	48	59	78	102 h	118 h	102 h	118 h	102 h	118 h	102 h
YDR277C	MTH1	0.94	1.47	1.60	2.00	2.13	2.23	7.44	9.81	46.77	48.93	54.21	58.74	307.82
YDR278C	YDR278c	0.92	1.44	1.51	1.94	2.10	2.21	6.87	11.55	40.64	50.15	47.51	61.70	303.69
YDR279W	RNH202	0.98	1.49	1.58	2.05	2.22	2.34	4.88	8.37	34.55	40.02	39.43	48.40	294.15
YDR281C	PHM6	0.94	1.46	1.48	1.88	2.03	2.15	10.38	10.88	51.40	50.54	61.79	61.43	316.51
YDR282C	YDR282c	0.94	1.49	1.62	1.96	2.10	2.21	4.28	6.42	29.88	34.83	34.17	41.24	293.47
YDR283C	GCN2	0.91	1.12	1.27	1.65	1.86	1.98	7.02	-0.01	54.64	4.89	61.66	4.88	301.58
YDR284C	DPP1	0.91	1.41	1.50	1.91	2.06	2.16	5.81	7.17	41.54	43.48	47.35	50.65	279.63
YDR285W	ZIP1	0.91	1.40	1.54	1.93	2.07	2.18	8.67	6.80	48.93	42.30	57.60	49.10	312.14
YDR286C	YDR286c	0.92	1.45	1.61	2.00	2.13	2.22	7.26	5.58	42.98	34.81	50.23	40.39	303.20
YDR287W	INM2	0.97	1.52	1.61	2.06	2.22	2.30	3.86	3.41	27.46	16.63	31.32	20.03	288.53
YDR289C	RTT103	0.92	1.41	1.32	1.78	1.95	2.08	11.68	12.15	52.25	54.68	63.93	66.83	319.73
YDR290W	YDR290w	1.00	1.51	1.54	1.97	2.09	2.22	19.35	24.76	63.22	70.89	82.58	95.65	344.70
YDR291W	HRQ1	0.94	1.45	1.60	2.00	2.15	2.25	4.92	11.86	33.78	48.31	38.70	60.18	297.11
YDR293C	SSD1	0.97	1.51	1.60	2.00	2.15	2.29	3.72	3.84	21.56	19.68	25.28	23.52	277.65
YDR294C	DPL1	0.96	1.49	1.56	2.00	2.15	2.28	3.53	6.11	21.20	33.34	24.74	39.45	286.04
YDR295C	HDA2	0.88	1.22	1.30	1.73	1.96	2.10	2.18	1.37	32.38	12.51	34.56	13.88	211.93
YDR296W	MHR1	0.93	1.04	1.03	0.92	0.93	0.91	124.00	123.76	151.41	116.87	275.41	240.64	418.95
YDR297W	SUR2	0.96	1.55	1.72	2.03	2.14	2.21	3.56	3.28	19.01	13.01	22.57	16.28	302.02
YDR298C	ATP5	0.85	1.19	1.27	1.50	1.66	1.75	10.25	2.78	57.95	31.61	68.20	34.39	249.16
YDR300C	PRO1	1.00	1.07	1.11	1.01	1.01	0.99	125.83	123.74	145.57	111.99	271.40	235.74	436.62
YDR304C	CPR5	0.93	1.47	1.63	1.97	2.09	2.18	7.19	5.19	42.23	34.05	49.42	39.24	304.53
YDR305C	HNT2	0.90	1.42	1.58	1.94	2.08	2.15	6.79	5.10	45.03	33.49	51.82	38.59	299.91
YDR306C	YDR306c	0.98	1.45	1.46	1.93	2.11	2.20	6.25	3.27	42.50	12.27	48.74	15.55	300.91
YDR307W	YDR307w	0.94	1.49	1.61	1.98	2.12	2.22	5.28	3.68	36.52	24.89	41.80	28.56	293.72
YDR309C	GIC2	0.92	1.45	1.57	2.01	2.15	2.26	3.29	3.49	16.13	19.43	19.43	22.92	279.94
YDR310C	SUM1	0.95	1.44	1.48	1.87	2.01	2.15	9.07	6.44	47.53	37.29	56.60	43.73	303.32
YDR312W	SSF2	0.93	1.43	1.54	1.94	2.08	2.20	7.93	9.80	47.20	49.46	55.14	59.26	308.30
YDR313C	PIB1	0.94	1.49	1.61	2.03	2.16	2.26	4.47	4.59	31.76	30.90	36.23	35.49	298.21
YDR314C	RAD34	1.02	1.56	1.71	2.11	2.27	2.36	3.74	5.23	24.43	32.03	28.18	37.26	282.75
YDR315C	IPK1	1.00	1.48	1.46	1.79	2.02	2.22	23.54	27.88	67.85	73.94	91.39	101.83	323.61
YDR315C	IPK1	0.91	1.18	1.23	1.45	1.71	1.98	19.23	13.25	69.87	46.66	89.10	59.91	288.54
YDR316W	OMS1	0.95	1.49	1.63	2.02	2.18	2.27	3.24	3.89	14.10	19.75	17.35	23.64	258.02
YDR317W	HIM1	0.94	1.42	1.44	1.87	2.03	2.15	5.40	6.07	38.44	39.86	43.84	45.93	291.56
YDR318W	MCM21	0.91	1.31	1.27	1.55	1.75	1.91	25.80	24.33	77.12	77.90	102.92	102.23	333.51
YDR318W	MCM21	1.02	1.34	1.38	1.69	1.90	2.11	26.09	7.92	84.85	46.05	110.94	53.97	327.90
YDR319C	YDR319c	0.88	1.38	1.49	1.88	2.03	2.13	8.36	4.76	50.28	33.59	58.64	38.35	304.43
YDR320C	SWA2	0.97	1.34	1.19	1.62	2.11	2.17	27.30	17.54	73.62	64.09	100.92	81.63	319.25
YDR321W	ASP1	0.91	1.43	1.51	1.96	2.11	2.24	5.87	3.17	39.95	12.30	45.82	15.47	297.54
YDR322C-A	TIM11	0.88	1.12	1.26	1.68	1.87	2.01	9.04	1.48	53.24	16.87	62.28	18.34	309.12
YDR322W	MRPL35	0.89	1.16	1.16	0.99	0.97	0.93	95.11	87.67	131.80	131.51	226.91	219.18	409.47
YDR323C	PEP7	0.98	1.42	1.41	1.80	2.05	2.25	28.38	34.12	74.13	82.95	102.52	117.07	329.62
YDR326C	YSP2	0.97	1.24	1.47	1.87	2.03	2.18	13.01	1.17	55.69	15.43	68.70	16.60	321.19
YDR329C	PEX3	1.04	1.49	1.58	1.95	2.09	2.19	11.94	9.08	56.94	49.17	68.88	58.25	299.98
YDR330W	UBX5	0.94	1.46	1.57	1.98	2.12	2.24	7.04	4.82	45.71	33.07	52.75	37.90	304.58
YDR332W	IRC3	0.98	1.51	1.55	1.99	2.15	2.28	4.17	5.05	26.67	31.09	30.84	36.14	283.06
YDR333C	YDR333c	0.96	1.52	1.63	1.98	2.11	2.23	3.83	4.03	25.52	25.95	29.35	29.98	284.33
YDR334W	SWR1	0.91	1.32	1.25	1.62	1.80	1.94	19.28	25.11	67.40	67.50	86.67	92.61	322.47
YDR335W	MSN5	0.90	1.39	1.44	1.84	2.02	2.14	2.91	3.96	13.75	21.70	16.66	25.66	283.33
YDR336W	YDR336w	0.93	1.43	1.52	1.87	2.04	2.14	3.59	3.33	30.29	18.93	33.87	22.26	292.61
YDR337W	MRPS28	0.89	1.41	1.53	1.88	2.01	2.10	4.86	3.11	34.02	15.48	38.88	18.59	291.27
YDR338C	YDR338c	0.94	1.18	1.37	1.77	1.97	2.09	7.21	1.37	52.06	27.03	59.27	28.40	313.31
YDR340W	YDR340w	0.90	1.13	1.30	1.71	1.91	2.04	9.90	4.80	56.40	41.23	66.30	46.03	314.39
YDR344C	YDR344c	0.91	1.14	1.29	1.75	1.95	2.06	9.94	2.61	50.33	30.57	60.27	33.18	314.06
YDR345C	HXT3	0.95	1.30	1.52	2.07	2.23	2.30	21.25	10.12	70.42	53.58	91.67	63.70	332.58
YDR346C	SVF1	0.98	1.17	1.33	1.92	2.15	2.30	2.04	2.02	34.27	29.70	36.30	31.72	300.59
YDR347W	MRP1	1.09	1.15	1.15	1.17	1.18	1.20	130.79	122.47	128.93	118.32	259.73	240.78	542.94
YDR348C	YDR348c	1.02	1.36	1.60	2.01	2.17	2.29	10.70	8.97	55.82	48.69	66.52	57.66	311.92
YDR349C	YPS7	0.96	1.24	1.41	1.74	1.91	2.11	0.05	-0.07	5.47	0.94	5.52	0.87	336.24
YDR350C	ATP22	0.96	1.01	1.00	1.02	1.03	1.04	128.30	119.45	124.02	116.93	252.32	236.38	542.99
YDR351W	SBE2	0.98	1.28	1.44	1.84	1.98	2.18	0.01	-0.01	5.76	0.21	5.78	0.21	313.89
YDR352W	YDR352w	1.00	1.24	1.43	1.89	1.90	2.04	0.11	0.05	11.53	5.54	11.64	5.58	270.20
YDR354W	TRP4	0.94	1.22	1.37	1.77	1.98	2.13	26.26	4.62	78.81	38.38	105.07	43.00	356.66
YDR357C	YDR357c	1.01	1.36	1.54	1.98	2.12	2.24	2.27	0.18	36.38	11.03	38.65	11.20	297.28
YDR358W	GGA1	0.88	1.09	1.24	1.70	1.88	2.01	5.51	1.79	45.77	31.19	51.28	32.99	304.87
YDR359C	EAF1	0.91	1.12	1.34	1.85	2.02	2.16	14.06	2.01	58.63	31.73	72.69	33.74	330.79
YDR360W	YDR360w	0.91	1.08	1.17	1.66	1.88	2.02	27.78	17.66	78.74	65.89	106.52	83.55	369.14
YDR363W	ESC2	0.99	1.16	1.33	1.89	2.12	2.25	21.21	15.08	71.73	61.75	92.94	76.83	342.96
YDR363W-A	SEM1	0.99	1.23	1.33	1.70	1.89	2.09	33.44	15.50	83.23	62.78	116.67	78.28	351.91
YDR364C	CDC40	1.09	1.18	1.25	1.60	1.85	2.09	77.54	73.63	108.84	109.34	186.38	182.97	461.24
YDR368W	YPR1	1.01	1.31	1.52	1.97	2.14	2.29	14.06	5.21	61.51	41.89	75.57	47.10	348.19
YDR369C	XRS2	0.99	1.14	1.19	1.48	1.66	1.86	47.82	42.46	94.67	90.57	142.48	133.03	401.40
YDR370C	YDR370c	0.99	1.29	1.50	1.99	2.17	2.32	6.84	3.95	42.63	33.70	49.48	37.66	308.98
YDR371W	CTS2	1.02	1.33	1.55	1.99	2.15	2.32	0.46	-0.06	22.78	7.54	23.24	7.48	312.96
YDR372C	VPS74	1.00	1.32	1.49	1.84	1.97	2.10	8.10	2.33	51.42	33.05	59.52	35.38	313.34
YDR374C	YDR374c	1.01	1.42	1.62	2.08	2.21	2.34	1.48	0.02	23.44	1.84	24.92	1.86	296.76
YDR375C	BCS1	0.97	1.04	1.02	1.08	1.11	1.11	122.15	119.96	126.23	123.63	248.38	243.58	536.84
YDR377W	ATP17	0.93	1.02	0.99	1.02	1.04	1.03	119.36	118.81	118.85	118.80	238.21	237.62	536.23
YDR378C	LSM6	0.92	1.04	1.03	1.25	1.52	1.78	54.42	46.84	100.48	93.46	154.90	140.31	346.44
YDR379C-A	YDR379c-a	0.95	1.30	1.47	1.85	2.00	2.12	10.30	2.84	57.76	26.35	68.06	29.19	311.33
YDR379W	RGA2	1.01	1.26	1.48	2.01	2.19	2.30	16.35	8.32	65.01	49.67	81.36	58.00	329.82
YDR380W	ARO10	0.94	1.19	1.40	1.91	2.08	2.19	4.93	1.05	43.45	24.37	48.38	25.42	298.04
YDR382W	RPP2b	1.00	1.21	1.29	1.86	2.15	2.30	8.48	4.84	52.14	43.44	60.62	48.28	291.93
YDR383C	NKP1	0.92	1.18	1.31	1.78	1.97	2.09	11.62	2.07	58.42	30.43	70.04	32.50	316.50
YDR384C	ATO3	0.93	1.29	1.52	1.96	2.12	2.22	10.61	1.19	57.89	24.34	68.49	25.53	316.57
YDR385W	EFT2	1.02	1.45	1.66	2.07	2.19	2.30	10.08	5.06	56.23	42.12	66.31	47.18	317.47
YDR386W	MUS81	0.94	1.21	1.37	1.84	2.01	2.11	7.58	4.38	51.30	34.05	58.88	38.43	308.29
YDR387C	YDR387c	0.94	1.29	1.50	1.93	2.08	2.19	10.89	2.25	57.49	18.11	68.38	20.36	320.08
YDR388W	RVS167	0.94	1.33	1.54	1.95	2.08	2.18	6.78	2.01	45.32	27.21	52.10	29.22	295.96
YDR389W	SAC7	0.89	1.12	1.26	1.79	1.98	2.10	17.93	10.74	67.21	53.07	85.14	63.81	352.19
YDR391C	YDR391c	0.89	1.16	1.31	1.84	2.15	2.06	11.22	5.73	59.10	44.24	70.33	49.97	319.53
YDR392W	SPT3	1.51	1.95	1.99	2.20	2.17	2.44	30.04	19.80	90.44	74.82	120.48	94.62	374.50
YDR393W	SHE9	0.96	1.28	1.51	1.99	2.16	2.26	3.54	3.05	39.97	34.46	43.51	37.51	293.80
YDR395W	SXM1	1.00	1.43	1.69	2.18	2.31	2.40	0.81	0.29	16.27	6.02	17.09	6.31	269.49
YDR399W	HPT1	0.92	1.29	1.53	1.99	2.14	2.21	4.35	0.84	41.40	17.66	45.75	18.50	298.40
YDR400W	URH1	0.97	1.38	1.61	2.05	2.19	2.27	4.55	1.03	41.60	21.55	46.14	22.58	307.66
YDR401W	YDR401w	0.90	1.18	1.34	1.80	1.98	2.08	1.27	0.39	26.53	9.52	27.80	9.91	294.58
YDR402C	DIT2	0.97	1.31	1.54	2.02	2.16	2.24	6.86	3.45	47.70	31.94	54.55	35.39	307.61
YDR403W	DIT1	0.92	1.24	1.42	1.87	2.02	2.10	6.97	4.22	49.90	36.73	56.87	40.96	307.67
YDR405W	MRP20	0.92	1.07	1.08	0.95	0.96	0.90	130.79	127.87	134.26	140.96	265.05	268.84	517.75
YDR406W	PDR15	0.94	1.31	1.55	2.00	2.15	2.23	15.49	0.78	62.27	16.97	77.76	17.76	330.62
YDR408C	ADE8	0.83	1.05	1.08	0.97	1.12	1.14	111.68	109.83	123.77	121.02	235.45	230.84	489.67
YDR409W	SIZ1	0.96	1.26	1.50	1.99	2.15	2.25	10.73	4.60	57.90	40.90	68.64	45.49	310.40
YDR410C	STE14	0.98	1.24	1.51	1.97	2.12	2.19	3.79	2.16	40.15	29.34	43.95	31.50	314.38
YDR411C	DFM1	0.91	1.18	1.39	1.86	2.04	2.14	7.42	1.79	54.33	27.70	61.75	29.48	300.23
YDR414C	ERD1	0.97	1.20	1.33	1.77	1.96	2.09	5.59	1.54	46.04	25.11	51.63	26.65	294.58
YDR415C	YDR415c	1.00	1.45	1.69	2.08	2.21	2.29	1.56	2.46	28.35	17.31	29.91	19.76	294.85
YDR417C	YDR417c	0.88	1.07	1.12	1.36	1.56	1.76	1.16	0.43	19.99	1.97	21.15	2.40	323.97
YDR417C	YDR417c	0.97	1.26	1.47	1.85	2.01	2.17	14.59	2.45	59.89	27.01	74.48	29.46	325.86
YDR418W	RPL12b	0.97	1.26	1.42	1.94	2.16	2.31	3.67	1.38	38.08	27.99	41.75	29.37	296.66
YDR419W	RAD30	0.92	1.20	1.36	1.79	1.96	2.04	2.88	2.70	35.42	33.17	38.30	35.87	298.06
YDR420W	HKR1	0.98	1.32	1.53	1.99	2.17	2.27	2.73	2.27	34.51	20.35	37.24	22.62	293.46
YDR421W	ARO80	0.96	1.27	1.46	1.84	2.01	2.11	4.15	3.88	44.55	36.09	48.69	39.97	298.10
YDR422C	SIP1	0.93	1.28	1.47	1.90	2.06	2.14	10.25	2.53	56.18	30.74	66.44	33.27	302.93
YDR423C	CAD1	0.90	1.20	1.40	1.86	2.05	2.15	11.64	0.41	54.60	14.30	66.24	14.70	322.45
YDR424C	DYN2	0.89	1.20	1.27	1.65	1.86	2.02	18.54	5.69	63.25	37.39	81.78	43.08	339.41
YDR425W	SNX41	0.94	1.26	1.44	1.91	2.06	2.15	6.25	0.52	50.13	17.17	56.39	17.69	305.45
YDR426C	YDR426c	0.92	1.08	1.29	1.75	1.97	2.09	8.42	1.28	54.92	25.58	63.35	26.86	309.03
YDR428C	BNA7	1.00	1.20	1.43	1.92	2.09	2.19	3.63	1.46	40.08	23.15	43.71	24.61	297.61
YDR430C	CYM1	1.00	1.38	1.59	2.01	2.16	2.26	0.76	0.13	22.22	11.54	22.98	11.67	281.13
YDR431W	YDR431w	1.00	1.29	1.50	1.97	2.13	2.24	6.47	2.77	47.07	33.61	53.54	36.38	299.38
YDR432W	NPL3	0.83	1.04	1.05	0.96	1.07	1.18	44.33	32.32	103.77	93.05	148.09	125.37	332.26
YDR433W	YDR433w	0.94	1.25	1.41	1.84	1.99	2.08	3.78	0.79	40.58	21.52	44.36	22.31	301.32
YDR433W	YDR433w	0.94	1.12	1.12	1.13	1.35	1.59	50.48	38.46	96.74	68.82	147.22	107.28	344.57
YDR435C	PPM1	0.94	1.29	1.43	1.78	1.92	1.99	10.14	3.03	58.95	32.27	69.10	35.31	315.45
YDR436W	PPZ2	1.01	1.35	1.57	2.05	2.21	2.28	1.55	0.44	26.36	12.03	27.91	12.47	274.58
YDR438W	THI74	0.96	1.33	1.55	1.95	2.17	2.26	10.07	1.41	51.75	21.73	61.82	23.14	320.49
YDR439W	LRS4	0.90	1.31	1.51	1.90	2.12	2.18	19.99	9.47	64.82	52.13	84.80	61.60	336.07
YDR440W	DOT1	0.94	1.33	1.50	1.85	2.09	2.14	29.86	8.60	86.39	50.87	116.25	59.46	337.90
YDR441C	APT2	0.89	1.34	1.55	1.93	2.15	2.24	1.37	0.59	19.53	2.67	20.91	3.27	295.07
YDR442W	YDR442w	0.96	1.20	1.29	1.66	1.92	2.03	27.54	16.37	80.83	72.18	108.37	88.56	344.67
YDR443C	SSN2	0.87	1.06	1.10	1.61	1.64	1.74	17.61	5.24	65.88	41.03	83.49	46.28	363.92
YDR444W	YDR444w	0.90	1.11	1.27	1.61	1.83	2.05	2.88	0.90	31.24	4.44	34.12	5.33	297.46
YDR445C	YDR445c	0.83	0.84	0.87	1.22	1.50	1.76	16.08	4.13	67.02	37.60	83.10	41.73	309.57
YDR446W	ECM11	0.98	1.37	1.55	1.89	2.09	2.20	2.44	1.02	31.89	13.54	34.34	14.56	309.11

ORF.name	Strain	Optical density at 600 nm at regular intervals (h)						GLUCOSE		FRUCTOSE		TOTAL SUGARS (g/l)		TOTAL AMINO ACIDS (mg/L)
		0	26	33	48	59	78	102 h	118 h	102 h	118 h	102 h	118 h	102 h
YDR447C	RPS17b	0.97	1.29	1.48	1.89	2.14	2.26	2.02	0.95	25.23	9.86	27.25	10.81	305.47
YDR448W	ADA2	1.01	1.32	1.41	1.64	1.83	1.88	53.67	37.34	101.27	85.17	154.94	122.52	360.88
YDR448W	ADA2	0.92	1.17	1.24	1.46	1.65	1.81	33.45	24.53	85.45	57.99	118.90	82.52	326.11
YDR450W	RPS18a	0.95	1.38	1.57	1.90	2.14	2.27	6.12	0.92	39.25	7.40	45.38	8.32	328.90
YDR451C	YHP1	0.95	1.37	1.59	2.04	2.26	2.38	2.13	0.86	25.70	2.34	27.83	3.19	286.01
YDR452W	PPN1	0.93	1.31	1.50	1.91	2.22	2.19	9.42	0.88	50.40	5.92	59.82	6.80	304.16
YDR453C	TSA2	1.00	1.41	1.63	2.07	2.25	2.35	1.98	0.83	15.46	3.93	17.44	4.76	290.62
YDR455C	YDR455c	1.07	1.43	1.60	1.93	2.12	2.19	18.88	8.15	71.18	52.61	90.06	60.76	373.57
YDR456W	NHX1	1.10	1.46	1.63	2.00	2.18	2.24	25.29	12.15	79.35	60.61	104.64	72.76	389.63
YDR457W	TOM1	0.89	1.15	1.25	1.71	2.03	2.13	22.03	12.64	69.71	57.35	91.74	69.99	343.94
YDR458C	HEH2	0.97	1.35	1.60	1.97	2.22	2.30	1.69	0.77	24.53	4.88	26.22	5.65	298.68
YDR459C	PFA5	1.05	1.45	1.65	2.03	2.23	2.32	0.89	0.75	13.69	2.07	14.58	2.82	301.10
YDR461W	MFA1	0.89	1.08	1.27	1.66	1.85	2.02	6.73	1.97	42.15	22.24	48.88	24.22	301.03
YDR462W	MRPL28	0.97	1.28	1.50	1.91	2.13	2.22	18.02	7.15	64.92	47.58	82.93	54.73	320.37
YDR463W	STP1	0.95	1.28	1.44	1.82	2.05	2.14	5.26	2.93	42.18	32.22	47.43	35.15	270.29
YDR465C	RMT2	0.97	1.34	1.53	1.86	2.10	2.21	4.88	2.76	43.70	29.31	48.57	32.07	308.31
YDR466W	PKH3	0.91	1.23	1.39	1.75	1.98	2.06	15.66	2.75	62.96	30.89	78.61	33.64	304.94
YDR467C	YDR467c	0.97	1.48	1.74	2.10	2.25	2.31	13.02	1.17	58.62	14.82	71.64	15.99	323.66
YDR469W	SDC1	0.95	1.41	1.69	2.04	2.22	2.31	15.85	1.00	62.01	12.37	77.86	13.37	325.44
YDR470C	UGO1	0.97	1.14	1.19	1.38	1.66	1.82	38.12	27.79	90.86	80.59	128.98	108.38	347.95
YDR470C	UGO1	1.10	1.42	1.44	1.51	1.77	2.04	54.89	43.01	109.87	99.07	164.76	142.08	368.25
YDR471W	RPL27b	1.05	1.30	1.47	1.97	2.17	2.28	16.69	5.59	63.12	42.84	79.81	48.43	337.59
YDR474C	YDR474c	0.98	1.32	1.52	1.98	2.18	2.26	20.66	5.44	69.37	43.11	90.04	48.54	335.93
YDR475C	JIP4	0.89	1.21	1.37	1.74	1.93	2.11	2.06	0.87	29.76	7.08	31.82	7.95	284.79
YDR475C	JIP4	0.95	1.29	1.50	1.94	2.13	2.20	18.51	9.04	66.69	50.94	85.21	59.97	330.76
YDR476C	YDR476c	0.97	1.28	1.50	1.97	2.20	2.27	3.72	1.03	38.23	17.46	41.94	18.49	302.53
YDR477W	SNF1	0.91	1.04	1.10	1.44	1.73	2.03	24.45	3.81	71.77	37.12	96.23	40.94	307.51
YDR479C	PEX29	0.94	1.29	1.51	1.94	2.06	2.12	4.92	0.95	41.62	12.32	46.55	13.28	302.05
YDR480W	DIG2	0.96	1.46	1.68	2.02	2.12	2.25	2.95	0.80	29.41	7.29	32.36	8.09	276.85
YDR481C	PHO8	0.96	1.33	1.54	1.93	2.14	2.23	11.99	2.90	58.19	33.88	70.18	36.78	295.40
YDR482C	CWC21	0.87	1.08	1.22	1.61	1.87	1.97	10.46	5.81	57.11	41.65	67.57	47.46	293.15
YDR483W	KRE2	0.93	1.17	1.37	1.79	1.98	2.14	10.27	4.11	51.82	30.89	62.09	35.00	309.77
YDR484W	VPS52	0.99	1.42	1.62	1.92	2.05	2.09	6.66	1.72	44.45	21.20	51.11	22.92	261.03
YDR485C	VPS72	0.96	1.25	1.37	1.75	1.98	2.05	24.09	6.39	72.62	41.43	96.70	47.82	329.54
YDR485C	VPS72	0.96	1.21	1.30	1.61	1.83	1.99	24.82	19.22	76.12	52.91	100.93	72.13	316.44
YDR486C	VPS60	0.94	1.26	1.42	1.82	2.17	2.15	1.68	0.86	25.91	6.22	27.59	7.08	253.42
YDR488C	PAC11	0.94	1.22	1.36	1.70	1.93	2.04	12.29	3.98	60.20	38.87	72.50	42.85	291.70
YDR490C	PKH1	0.99	1.31	1.51	1.95	2.16	2.23	19.98	13.61	69.44	61.21	89.42	74.82	333.38
YDR491C	YDR491c	1.08	1.46	1.69	2.14	2.33	2.42	14.61	2.25	58.82	24.63	73.43	26.88	330.21
YDR492W	IZH1	0.95	1.26	1.48	1.99	2.17	2.25	15.12	6.17	63.00	44.59	78.11	50.75	321.88
YDR493W	MZM1	0.92	1.20	1.43	2.20	2.23	2.29	4.59	1.24	37.79	13.17	42.37	14.41	288.63
YDR494W	RSM28	0.93	1.21	1.35	1.64	1.86	1.92	15.39	3.53	60.53	34.40	75.92	37.93	319.60
YDR495C	VPS3	0.91	1.21	1.35	1.66	1.88	1.96	5.20	1.12	60.29	28.32	65.49	29.44	353.12
YDR496C	PUF6	0.97	1.25	1.37	1.75	2.03	2.17	6.93	1.32	49.24	20.04	56.17	21.36	280.46
YDR497C	ITR1	0.83	1.07	1.26	1.79	2.02	2.11	11.49	14.51	61.53	63.97	73.02	78.48	307.68
YDR500C	RPL37b	0.89	1.16	1.26	1.69	1.98	2.11	2.14	0.86	29.31	9.50	31.45	10.37	229.55
YDR500C	RPL37b	0.89	1.22	1.31	1.74	1.97	2.13	4.89	0.80	47.17	8.95	52.07	9.75	282.09
YDR501W	PLM2	0.88	1.19	1.39	1.82	2.04	2.13	5.24	1.11	43.40	15.91	48.65	17.02	264.55
YDR501W	PLM2	0.87	1.15	1.33	1.73	1.95	2.11	3.68	0.95	36.24	12.82	39.92	13.77	274.76
YDR502C	SAM2	0.97	1.25	1.47	1.89	2.09	2.22	6.93	1.60	45.66	17.78	52.59	19.38	306.81
YDR503C	LPP1	0.89	1.20	1.39	1.82	2.04	2.11	4.26	1.03	40.67	15.71	44.92	16.74	286.48
YDR504C	SPG3	0.96	1.32	1.56	2.00	2.18	2.26	1.94	0.86	26.70	9.35	28.64	10.21	284.70
YDR505C	PSP1	0.91	1.20	1.37	1.87	2.10	2.21	1.28	1.01	20.14	16.13	21.42	17.14	249.72
YDR506C	YDR506c	0.96	1.38	1.61	2.04	2.21	2.31	1.05	1.05	20.72	16.30	21.76	17.35	273.38
YDR506C	YDR506c	0.98	1.23	1.46	1.90	2.09	2.23	6.11	1.59	41.60	19.48	47.71	21.06	315.38
YDR507C	GIN4	1.02	1.16	1.16	1.02	1.07	0.99	127.93	135.31	125.31	132.02	253.24	267.34	277.76
YDR507C	GIN4	1.04	1.15	1.20	1.41	1.71	1.98	6.19	4.22	46.25	36.95	52.44	41.17	249.33
YDR508C	GNP1	0.91	1.27	1.49	1.89	2.12	2.17	12.31	2.30	59.41	29.97	71.73	32.27	340.90
YDR509W	YDR509w	0.98	1.37	1.56	1.87	2.07	2.12	1.19	0.78	16.12	9.67	17.31	10.45	317.70
YDR511W	ACN9	0.92	1.29	1.49	1.85	2.07	2.11	23.08	2.33	71.72	28.53	94.80	30.86	349.96
YDR512C	EMI1	0.95	1.28	1.49	1.89	2.11	2.19	12.72	4.31	56.28	36.11	69.01	40.42	312.76
YDR512C	EMI1	0.89	1.22	1.38	1.80	1.99	2.10	5.32	0.82	47.72	9.39	53.03	10.21	289.43
YDR512C	EMI1	1.02	1.46	1.65	2.01	2.17	2.31	3.77	1.36	37.67	10.16	41.45	11.51	287.92
YDR513W	GRX2	0.98	1.34	1.55	1.99	2.19	2.30	0.79	0.76	4.41	2.42	5.20	3.18	271.06
YDR514C	YDR514c	0.94	1.31	1.52	1.94	2.12	2.22	1.61	0.94	21.30	9.38	22.91	10.32	222.80
YDR515W	SLF1	0.93	1.16	1.33	1.76	1.95	2.09	6.90	2.24	43.74	24.12	50.64	26.36	307.68
YDR516C	EMI2	0.89	1.18	1.37	1.81	2.04	2.14	3.35	0.94	35.16	11.59	38.51	12.53	255.20
YDR517W	GRH1	0.91	1.20	1.36	1.76	1.99	2.08	4.19	1.14	34.84	14.03	39.03	15.17	230.05
YDR518W	EUG1	0.85	1.11	1.30	1.65	1.86	1.98	5.04	0.99	41.47	10.21	46.51	11.20	282.48
YDR518W	EUG1	0.93	1.28	1.48	1.84	2.01	2.13	4.99	2.71	44.16	27.48	49.14	30.18	262.16
YDR519W	FPR2	0.98	1.39	1.63	2.06	2.22	2.28	2.78	2.35	32.78	29.77	35.56	32.13	299.17
YDR520C	URC2	1.04	1.49	1.74	2.16	2.30	2.40	0.83	0.80	2.03	1.46	2.86	2.26	253.94
YDR521W	YDR521w	0.94	1.04	1.07	1.18	1.40	1.58	36.05	22.71	82.85	68.99	118.90	91.71	321.99
YDR522C	SPS2	0.96	1.38	1.61	2.06	2.23	2.33	0.94	0.79	8.06	5.96	9.00	6.76	236.81
YDR523C	SPS1	0.95	1.14	1.13	0.99	1.00	0.97	123.89	121.20	136.97	128.26	260.87	249.46	534.46
YDR524C	AGE1	0.99	1.33	1.55	1.96	2.17	2.26	1.04	0.73	23.19	10.35	24.23	11.08	286.19
YDR524C-B	YDR524c-b	0.92	1.21	1.35	1.73	1.93	2.08	8.44	1.90	50.13	15.92	58.57	17.82	301.11
YDR524W-A	YDR524w-a	0.86	1.12	1.25	1.60	1.81	1.98	8.71	3.22	54.87	25.08	63.58	28.30	299.21
YDR525W	API2	0.95	1.28	1.47	1.81	2.02	2.08	4.25	1.35	39.49	20.48	43.74	21.83	291.45
YDR525W-A	SNA2	0.92	1.10	1.14	1.64	1.91	2.17	7.50	3.56	40.66	14.95	48.15	18.50	293.91
YDR526W	HLR1	0.86	1.10	1.26	1.61	1.81	1.87	1.35	0.68	19.35	1.19	20.70	1.87	294.05
YDR529C	QCR7	0.96	1.36	1.53	1.87	2.09	2.12	10.27	2.38	54.04	32.27	64.31	34.65	318.69
YDR530C	APM2	0.99	1.35	1.60	1.98	2.20	2.22	8.05	2.53	51.56	31.74	59.20	34.27	309.60
YDR532C	YDR532c	1.00	1.28	1.37	1.70	1.92	2.03	34.09	28.36	84.89	79.19	118.98	107.55	310.26
YDR533C	HSP31	0.93	1.30	1.51	1.93	2.12	2.22	4.53	0.79	40.98	11.48	45.50	12.26	265.28
YDR534C	FIT1	0.95	1.37	1.60	2.02	2.20	2.28	1.26	0.66	18.64	5.50	19.90	6.16	231.45
YDR535C	YDR535c	0.89	1.13	1.22	1.64	1.83	2.03	12.39	3.43	58.06	15.60	70.46	19.03	328.98
YDR536W	STL1	1.01	1.35	1.50	1.92	2.07	2.22	9.25	3.30	50.81	12.20	60.06	15.50	188.93
YDR537C	YDR537c	0.93	1.17	1.40	1.88	2.31	2.18	9.31	6.04	52.05	42.29	61.36	48.33	306.53
YDR538W	PAD1	0.96	1.27	1.39	1.81	1.98	2.16	6.46	3.25	41.32	14.77	47.78	18.02	299.45
YDR539W	FDC1	0.88	1.13	1.21	1.60	1.77	1.98	7.77	3.57	43.14	19.80	50.91	23.38	309.30
YDR540C	IRC4	0.89	1.12	1.17	1.59	1.78	1.99	8.46	3.58	49.94	18.61	58.40	22.18	307.80
YDR541C	YDR541c	0.92	1.23	1.39	1.87	2.02	2.18	5.98	3.23	38.86	14.67	44.85	17.90	300.60
YEL001C	IRC22	0.90	1.25	1.47	1.92	2.09	2.18	4.64	2.53	48.32	30.84	52.96	33.37	302.63
YEL003W	GIM4	0.91	1.15	1.24	1.56	1.68	1.80	0.07	0.07	7.53	0.20	7.59	0.27	270.23
YEL004W	YEA4	0.85	1.06	1.19	1.56	1.77	1.92	5.51	1.81	44.92	19.91	50.42	21.72	298.71
YEL005C		0.91	1.19	1.33	1.79	1.97	2.05	12.89	1.99	64.50	32.02	77.40	34.00	318.12
YEL005C	VAB2	0.93	1.19	1.34	1.66	1.92	2.07	18.40	8.68	66.42	48.46	84.82	57.14	317.59
YEL005C	VAB2	0.91	1.21	1.34	1.65	1.93	2.07	17.97	4.82	66.75	35.31	84.72	40.13	327.30
YEL006W	YEA6	0.91	1.08	1.24	1.73	1.91	2.02	6.72	0.98	52.20	22.77	58.92	23.75	309.78
YEL007W	YEL007w	0.96	1.13	1.18	1.67	1.90	2.05	13.02	5.82	63.49	45.19	76.50	51.01	315.81
YEL008W	YEL008w	0.94	1.22	1.38	1.82	1.98	2.10	2.44	0.44	34.78	16.17	37.22	16.61	284.64
YEL009C	GCN4	0.97	1.35	1.58	2.06	2.21	2.29	2.77	0.92	36.93	15.15	39.69	16.07	286.86
YEL010W	YEL010w	0.97	1.35	1.58	2.03	2.19	2.27	4.12	0.51	43.20	17.02	47.32	17.53	299.73
YEL011W	GLC3	0.95	1.44	1.60	1.95	2.11	2.22	13.70	3.69	51.91	20.91	65.61	24.60	334.80
YEL012W	UBC8	1.02	1.64	1.83	2.17	2.26	2.32	5.79	5.43	34.63	27.86	40.42	33.29	300.67
YEL013W	VAC8	0.93	1.23	1.34	1.74	1.93	2.07	0.35	0.05	25.51	8.68	25.85	8.74	318.99
YEL014C	YEL014c	0.97	1.39	1.61	2.04	2.18	2.25	11.06	2.48	57.72	29.49	68.78	31.97	318.19
YEL015W	EDC3	0.99	1.36	1.57	2.01	2.17	2.26	4.77	1.85	43.83	29.13	48.61	30.97	283.59
YEL016C	NPP2	0.91	1.21	1.36	1.83	2.01	2.10	3.11	1.11	39.47	23.22	42.57	24.33	296.22
YEL017C-A	PMP2	0.93	1.28	1.47	1.91	2.06	2.14	3.93	0.66	38.04	16.94	41.97	17.61	308.94
YEL017W	GTT3	0.95	1.32	1.55	2.01	2.17	2.26	3.89	1.03	41.02	22.21	44.91	23.23	290.15
YEL020C	YEL020c	0.89	1.12	1.28	1.78	1.99	2.09	9.59	1.03	51.23	22.45	60.82	23.48	304.70
YEL022W	GEA2	0.90	1.19	1.29	1.75	1.97	2.12	5.40	1.05	45.07	11.55	50.47	12.60	287.54
YEL023C	YEL023c	0.94	1.21	1.36	1.81	2.00	2.10	3.66	1.19	41.70	25.87	45.56	27.06	294.95
YEL024W	RIP1	0.90	1.06	1.07	0.93	0.93	0.90	111.80	109.77	134.67	135.93	246.47	245.71	415.48
YEL025C	YEL025c	0.97	1.34	1.54	1.97	2.13	2.22	8.89	0.82	52.81	21.14	61.69	21.96	313.81
YEL027W	CUP5	0.83	1.02	1.04	1.08	1.25	1.43	23.71	12.40	83.30	69.77	107.02	82.17	283.40
YEL028W	YEL028w	0.96	1.33	1.54	1.98	2.13	2.23	3.66	0.97	31.70	20.56	35.36	21.53	292.09
YEL029C	BUD16	0.91	1.16	1.26	1.65	1.87	2.01	8.48	1.10	61.95	24.44	70.43	25.55	336.18
YEL030W	ECM10	0.94	1.24	1.39	1.78	1.97	2.07	1.20	0.29	27.07	11.42	28.27	11.71	278.70
YEL031W	SPF1	0.98	1.23	1.33	1.73	1.95	2.11	1.91	0.05	20.37	1.40	22.27	1.45	196.59
YEL033W	MTC7	0.91	1.21	1.39	1.81	1.99	2.08	1.71	0.16	29.84	8.05	31.55	8.20	265.52
YEL036C	ANP1	0.89	1.10	1.06	0.94	0.94	0.90	119.58	120.97	139.79	109.33	259.38	230.30	475.79
YEL037C	RAD23	0.92	1.19	1.34	1.83	2.05	2.17	0.38	0.15	15.85	2.66	16.23	2.81	278.32
YEL038W	UTR4	0.91	1.20	1.35	1.78	1.95	2.06	2.62	0.24	24.91	5.78	27.53	6.02	286.23
YEL039C	CYC7	0.92	1.24	1.42	1.90	2.06	2.16	0.66	0.11	22.71	6.63	23.37	6.74	278.55
YEL040W	UTR2	1.00	1.37	1.57	2.03	2.16	2.24	3.89	0.22	45.11	13.92	49.00	14.14	292.34
YEL041W	YEF1	1.00	1.40	1.60	2.00	2.13	2.23	1.27	0.13	26.89	9.54	28.16	9.67	282.23
YEL041W	YEF1	0.94	1.26	1.42	1.78	1.96	2.10	4.71	0.84	41.02	4.44	45.73	5.28	276.56
YEL042W	GDA1	0.98	1.20	1.30	1.80	2.01	2.18	5.77	0.80	49.28	22.04	55.05	22.83	296.56
YEL043W	YEL043w	0.98	1.38	1.59	2.05	2.21	2.31	0.61	0.02	24.18	3.85	24.80	3.87	282.42
YEL044W	IES6	0.86	1.05	1.12	1.33	1.50	1.71	1.13	0.45	19.39	1.66	20.53	2.10	323.38
YEL046C	GLY1	0.88	1.11	1.10	0.99	1.07	1.12	95.79	79.87	117.15	106.21	212.94	186.07	474.21

ORF.name	Strain	Optical density at 600 nm at regular intervals (h)						GLUCOSE		FRUCTOSE		TOTAL SUGARS (g/l)		TOTAL AMINO ACIDS (mg/L)
		0	26	33	48	59	78	102 h	118 h	102 h	118 h	102 h	118 h	102 h
YEL047C	YEL047c	1.03	1.45	1.65	2.08	2.22	2.32	4.67	0.11	38.31	9.98	42.99	10.09	295.94
YEL048C	TCA17	0.94	1.27	1.46	1.91	2.07	2.17	3.51	0.05	38.94	5.16	42.45	5.20	292.33
YEL049W	PAU2	0.92	1.27	1.48	1.96	2.11	2.22	2.02	0.12	29.31	7.60	31.33	7.73	289.45
YEL050C	RML2	0.88	1.12	1.18	1.35	1.53	1.60	19.34	6.00	68.63	44.36	87.97	50.37	313.70
YEL051W	VMA8	0.87	1.06	1.06	1.06	1.34	1.62	35.61	24.03	87.42	84.82	123.03	108.85	321.67
YEL052W	AFG1	0.90	1.19	1.37	1.87	2.05	2.15	3.43	0.61	38.60	19.12	42.03	19.73	293.23
YEL053C	MAK10	0.97	1.22	1.37	1.89	2.06	2.15	5.66	2.62	47.41	33.87	53.07	36.49	295.45
YEL054C	RPL12a	0.92	1.10	1.20	1.76	1.97	2.13	13.30	3.82	61.87	36.17	75.18	39.99	328.12
YEL056W	HAT2	0.93	1.18	1.29	1.72	1.86	2.00	5.06	1.04	44.61	24.17	49.67	25.21	300.57
YEL057C	YEL057c	1.01	1.38	1.60	2.06	2.20	2.30	5.60	1.10	41.63	23.33	47.23	24.43	293.45
YEL059C-A	SOM1	0.90	1.09	1.07	0.96	0.96	0.94	100.25	80.16	131.69	98.63	231.95	178.79	423.68
YEL059W	YEL059w	0.98	1.16	1.16	1.40	1.61	1.84	70.37	59.19	111.70	101.07	182.07	160.26	405.06
YEL060C	PRB1	1.03	1.39	1.58	2.01	2.14	2.24	10.26	2.27	56.11	34.54	66.37	36.81	305.20
YEL061C	CIN8	0.93	1.16	1.29	1.81	2.01	2.16	3.03	0.09	31.09	13.00	34.12	13.09	255.44
YEL062W	NPR2	0.94	1.18	1.31	1.82	2.00	2.12	7.13	1.02	54.89	23.91	62.02	24.93	279.94
YEL063C	CAN1	0.91	1.18	1.32	1.81	1.99	2.11	2.83	0.32	37.43	16.55	40.26	16.86	239.29
YEL064C	AVT2	0.91	1.20	1.39	1.90	2.04	2.16	9.76	0.98	55.80	24.47	65.56	25.46	312.67
YEL065W	SIT1	0.94	1.24	1.44	1.92	2.10	2.22	3.48	0.29	39.10	16.71	42.58	17.01	300.59
YEL066W	HPA3	0.94	1.19	1.33	1.88	2.08	2.18	5.97	3.73	48.46	38.80	54.43	42.53	308.79
YEL067C	YEL067c	0.96	1.27	1.49	1.99	2.14	2.25	7.40	7.77	48.76	46.88	56.17	54.65	304.21
YEL068C	YEL068c	0.94	1.22	1.41	1.93	2.09	2.18	13.14	8.44	57.31	46.62	70.45	55.06	326.91
YEL071W	DLD3	0.97	1.27	1.47	1.97	2.13	2.22	10.41	4.73	55.23	38.21	65.64	42.94	312.62
YEL072W	RMD6	0.96	1.33	1.56	2.05	2.20	2.31	2.87	-0.16	35.70	4.81	38.57	4.64	300.49
YER001W	MNN1	0.94	1.26	1.48	1.97	2.12	2.22	10.43	0.72	54.12	20.58	64.55	21.30	303.13
YER002W	NOP16	1.00	1.29	1.49	2.03	2.18	2.27	15.72	0.35	61.69	15.21	77.41	15.56	334.49
YER004W	FMP52	1.00	1.33	1.53	1.99	2.14	2.26	11.52	1.26	55.96	24.84	67.47	26.10	323.02
YER005W	YND1	0.96	1.26	1.44	1.87	2.04	2.17	16.36	6.23	62.15	45.02	78.50	51.25	328.92
YER007C-A	TMA20	0.95	1.19	1.38	1.94	2.15	2.27	19.06	3.71	65.13	37.37	84.19	41.08	330.62
YER007W	PAC2	0.94	1.24	1.46	1.95	2.11	2.22	16.35	7.58	61.45	45.75	77.80	53.33	322.22
YER007W	PAC2	0.87	1.19	1.32	1.68	1.89	2.02	2.23	3.46	35.93	27.60	38.17	31.06	263.55
YER007W	PAC2	0.93	1.23	1.33	1.65	1.86	2.01	11.81	3.14	58.86	28.82	70.67	31.96	306.88
YER010C	YER010c	0.93	1.17	1.38	1.90	2.09	2.21	20.38	12.11	64.05	57.68	84.43	69.79	335.84
YER011W	TIR1	1.01	1.23	1.46	1.99	2.17	2.28	10.63	12.30	55.50	56.88	66.13	69.19	308.34
YER014C-A	BUD25	0.87	1.06	1.02	0.90	0.91	0.87	124.35	120.82	142.21	106.32	266.56	227.14	475.43
YER014W	HEM14	1.01	1.11	1.12	1.05	1.05	1.04	126.23	120.23	123.81	119.78	250.05	240.01	286.57
YER015W	FAA2	0.90	1.24	1.39	1.77	1.97	2.14	3.73	0.85	37.13	5.10	40.86	5.95	273.06
YER016W	BIM1	1.02	1.31	1.51	1.89	2.07	2.25	16.59	3.34	63.39	31.92	79.99	35.26	315.20
YER016W	BIM1	0.89	1.14	1.25	1.55	1.76	1.96	2.41	5.59	38.42	37.63	40.83	43.22	249.24
YER017C	AFG3	0.96	1.13	1.18	1.16	1.34	1.44	84.07	72.52	124.28	122.71	208.36	195.23	414.87
YER019C-A	SBH2	0.96	1.25	1.46	1.98	2.13	2.22	20.40	3.22	67.11	35.12	87.51	38.33	351.04
YER019W	ISC1	0.93	1.20	1.37	1.88	2.05	2.16	17.15	3.43	61.57	31.24	78.72	34.67	329.49
YER020W	GPA2	0.99	1.29	1.50	2.02	2.20	2.32	10.03	2.46	49.49	31.04	59.53	33.50	343.35
YER024W	YAT2	1.01	1.40	1.65	2.10	2.24	2.33	16.90	7.06	64.26	44.31	81.16	51.36	330.04
YER027C	GAL83	0.91	1.06	1.24	1.76	1.97	2.14	11.51	3.85	61.14	37.24	72.64	41.09	305.76
YER028C	MIG3	0.93	1.17	1.37	1.74	1.90	2.07	19.35	0.97	65.18	11.75	84.53	12.72	337.53
YER030W	CHZ1	1.02	1.33	1.53	2.01	2.17	2.28	26.33	8.95	71.38	53.86	97.71	62.80	356.60
YER031C	YPT31	0.99	1.59	1.77	2.16	2.29	2.37	4.78	9.75	28.62	41.68	33.40	51.43	284.52
YER032W	FIR1	0.92	1.19	1.41	1.89	2.06	2.21	19.42	1.55	65.40	28.65	84.82	30.20	338.33
YER033C	ZRG8	0.91	1.20	1.39	1.88	2.07	2.20	5.60	1.46	41.17	25.89	46.78	27.35	305.99
YER034W	YER034w	0.92	1.15	1.35	1.82	2.00	2.13	7.06	4.97	50.92	38.68	57.98	43.65	305.37
YER035W	EDC2	1.00	1.23	1.43	1.95	2.15	2.27	10.33	7.50	56.56	46.63	66.90	54.13	301.22
YER037W	PHM8	0.92	1.15	1.42	1.89	2.07	2.21	2.46	1.40	30.73	19.01	33.19	20.41	259.32
YER038W-A	Unknown	1.02	1.38	1.62	2.04	2.19	2.30	20.00	2.43	64.75	31.27	84.75	33.70	338.05
YER039C	HVG1	0.96	1.27	1.47	1.94	2.09	2.21	19.08	3.66	64.98	35.33	84.06	38.99	344.75
YER039C-A	YER039c-a	0.97	1.23	1.33	1.79	1.98	2.15	13.38	4.42	57.29	30.15	70.68	34.57	326.19
YER040W	GLN3	0.98	1.20	1.32	1.79	1.99	2.14	23.38	6.24	71.52	42.36	94.90	48.59	364.21
YER041W	YEN1	0.97	1.31	1.53	1.96	2.11	2.23	20.19	1.30	65.19	23.32	85.38	24.62	349.36
YER042W	MXR1	0.91	1.16	1.35	1.83	2.01	2.12	20.33	3.78	67.35	35.03	87.68	38.81	346.05
YER044C	ERG28	0.90	1.09	1.26	1.63	1.85	2.07	3.70	0.94	35.74	8.80	39.44	9.74	303.37
YER044C-A	MEI4	0.97	1.27	1.47	2.00	2.16	2.25	17.53	5.18	64.64	41.01	82.17	46.18	340.29
YER045C	ACA1	0.98	1.30	1.46	1.89	2.05	2.16	20.41	0.92	67.55	24.12	87.96	25.04	355.52
YER046W	SPO73	1.04	1.57	1.75	2.10	2.23	2.31	5.67	6.58	36.87	34.00	42.54	40.58	293.32
YER046W-A	Unknown	0.93	1.20	1.40	1.89	2.07	2.21	17.57	2.32	65.87	32.38	83.44	34.70	333.70
YER047C	SAP1	0.95	1.28	1.48	1.96	2.13	2.24	15.88	2.81	64.61	34.43	80.49	37.24	335.66
YER048C	CAJ1	0.93	1.22	1.43	1.97	2.16	2.28	1.74	0.08	21.76	7.06	23.51	7.14	284.64
YER049W	TPA1	0.98	1.31	1.55	2.08	2.23	2.33	17.15	-4.12	65.25	34.39	82.40	30.27	334.34
YER050C	RSM18	0.93	1.07	1.08	0.95	0.97	0.91	108.03	60.61	129.40	112.81	237.43	173.42	438.76
YER051W	JHD1	0.99	1.28	1.51	1.97	2.15	2.26	23.06	0.64	71.15	19.74	94.21	20.38	357.20
YER052C	HOM3	1.02	1.22	1.29	1.71	1.90	2.05	21.59	7.09	68.76	48.75	90.35	55.83	324.46
YER052C	HOM3	0.90	1.22	1.35	1.72	1.98	2.11	11.09	3.55	54.39	29.20	65.48	32.76	304.30
YER053C	PIC2	0.99	1.29	1.45	1.90	2.07	2.18	18.03	1.33	61.96	24.32	80.00	25.64	350.23
YER054C	GIP2	0.93	1.26	1.47	1.96	2.12	2.22	18.25	2.15	65.87	28.53	84.13	30.68	343.20
YER055C	HIS1	0.84	1.08	1.05	0.89	0.95	0.87	126.20	121.60	128.62	115.68	254.82	237.28	531.81
YER056C	FCY2	0.96	1.29	1.51	1.98	2.13	2.21	32.39	9.68	74.44	53.31	106.83	62.99	376.68
YER056C-A	RPL34a	0.97	1.21	1.38	1.83	1.99	2.09	25.34	6.80	70.27	46.18	95.61	52.98	383.93
YER057C	HMF1	0.98	1.23	1.40	1.92	2.09	2.21	11.90	0.27	55.62	10.37	67.52	10.65	327.88
YER059W	PCL6	0.92	1.20	1.37	1.82	1.97	2.08	28.49	5.66	75.27	43.79	103.77	49.45	348.36
YER060W	FCY21	0.92	1.18	1.37	1.86	2.03	2.18	8.59	0.89	50.66	19.77	59.25	20.66	314.86
YER060W-A	FCY22	0.89	1.04	1.11	1.66	1.91	2.07	15.77	4.53	64.64	41.49	80.41	46.03	324.56
YER061C	CEM1	0.98	1.19	1.37	1.91	2.14	2.29	1.60	0.16	29.13	8.62	30.72	8.79	285.74
YER062C	HOR2	0.99	1.29	1.49	1.96	2.13	2.23	21.05	1.03	65.89	22.19	86.94	23.22	341.54
YER063W	THO1	0.91	1.44	1.61	1.97	2.13	2.20	15.48	4.16	56.38	24.65	71.86	28.81	316.92
YER064C	YER064c	0.90	1.25	1.47	1.77	1.97	2.14	11.46	4.37	48.14	26.54	59.59	30.91	334.85
YER065C	ICL1	0.92	1.16	1.35	1.92	2.10	2.20	19.26	1.05	67.36	23.26	86.63	24.30	331.49
YER066C-A	YER066c-a	0.98	1.32	1.54	2.01	2.17	2.28	17.01	0.85	61.72	21.13	78.73	21.98	350.38
YER066W	RRT13	0.95	1.46	1.64	2.04	2.20	2.29	11.62	6.11	51.78	31.54	63.40	37.65	312.55
YER067C-A	Unknown	1.00	1.37	1.59	2.06	2.31	2.28	22.10	2.27	69.92	31.45	92.02	33.73	352.07
YER067W	YER067w	0.98	1.31	1.50	1.97	2.13	2.25	19.37	2.42	67.30	30.94	86.67	33.36	353.46
YER068C-A		0.94	1.24	1.42	1.87	2.04	2.14	15.09	0.08	64.29	4.36	79.38	4.44	330.27
YER068C-A	Unknown	0.88	1.28	1.43	1.83	2.01	2.15	4.66	1.80	38.38	16.59	43.04	18.39	273.03
YER068W	MOT2	0.94	1.12	1.15	1.14	1.36	1.58	72.95	68.36	117.20	121.71	190.15	190.07	352.80
YER069W	ARG5,6	0.98	1.32	1.54	2.01	2.16	2.28	21.88	0.13	67.09	6.40	88.97	6.54	348.86
YER070W	RNR1	0.87	1.09	1.04	0.91	0.91	0.87	122.46	123.37	145.80	111.20	268.26	234.57	475.63
YER071C	YER071c	0.95	1.22	1.41	1.85	2.01	2.15	11.31	0.76	58.82	21.46	70.12	22.22	292.09
YER072W	VTC1	0.89	1.13	1.30	1.75	1.94	2.06	7.76	0.35	47.45	14.62	55.22	14.97	306.30
YER073W	ALD5	1.00	1.24	1.45	2.02	2.21	2.34	9.50	1.29	54.22	27.67	63.72	28.96	306.62
YER074W	RPS24a	1.01	1.25	1.36	1.87	2.09	2.22	27.70	3.22	74.91	35.82	102.61	39.04	386.67
YER075C	PTP3	0.96	1.23	1.41	1.88	2.05	2.15	21.78	3.71	69.55	39.58	91.34	43.28	342.43
YER076C	YER076c	0.94	1.32	1.52	1.93	2.12	2.26	1.24	0.85	10.95	2.60	12.19	3.46	232.79
YER077C	YER077c	0.94	1.40	1.55	1.94	2.08	2.18	12.66	4.33	51.00	25.81	63.66	30.14	308.76
YER078C	ICP55	0.90	1.42	1.66	2.03	2.17	2.26	8.76	3.63	39.37	17.43	48.13	21.06	285.43
YER079W	YER079w	1.00	1.31	1.48	1.91	2.07	2.19	23.02	3.86	73.28	36.96	96.30	40.82	347.74
YER080W	AIM9	0.96	1.28	1.49	1.94	2.09	2.19	14.73	0.98	60.14	22.80	74.87	23.78	332.63
YER081W	SER3	0.96	1.28	1.47	1.93	2.09	2.19	33.59	7.98	83.67	54.65	117.26	62.63	353.43
YER083C	GET2	0.94	1.21	1.29	1.72	2.02	2.21	17.12	8.74	64.05	48.13	81.17	56.87	320.68
YER084w		0.95	1.27	1.48	1.94	2.11	2.25	9.68	0.15	50.79	3.86	60.47	4.01	314.11
YER084W	YER084w	0.89	1.25	1.38	1.79	2.00	2.15	5.69	2.57	43.76	23.52	49.45	26.08	275.81
YER085C	YER085c	1.00	1.37	1.59	2.06	2.20	2.31	17.58	0.11	63.41	6.78	80.99	6.89	338.10
YER086W	ILV1	0.86	1.12	1.22	1.53	1.80	2.01	1.33	1.38	11.75	5.54	13.08	6.92	287.10
YER086W	ILV1	0.92	1.16	1.31	1.73	1.91	2.05	19.84	0.21	69.23	10.72	89.08	10.93	350.92
YER087C-A	YER087C-A	0.93	1.21	1.42	1.90	2.07	2.19	10.59	0.26	53.04	4.14	63.63	4.40	310.18
YER087C-B	SBH1	0.96	1.30	1.47	1.86	2.07	2.17	9.17	1.32	55.31	13.73	64.48	15.06	293.40
YER087W	AIM10	0.86	1.06	1.12	1.53	1.79	1.98	10.69	2.50	63.86	27.79	74.55	30.28	276.97
YER088C	DOT6	0.96	1.38	1.54	1.90	2.08	2.21	9.69	3.98	45.66	22.81	55.36	26.79	327.21
YER089C	PTC2	0.94	1.14	1.28	1.68	1.89	2.03	15.04	5.79	60.98	40.48	76.02	46.27	322.06
YER090W	TRP2	0.92	1.34	1.48	1.82	2.01	2.14	1.62	1.32	22.67	4.45	24.29	5.78	284.52
YER091C	MET6	0.86	1.16	1.29	1.64	1.89	2.07	3.60	1.50	31.12	11.78	34.73	13.28	308.59
YER091C-A		0.94	1.21	1.31	1.88	2.05	2.06	25.79	15.04	70.80	57.77	96.59	72.82	351.43
YER091C-A	YER091c-a	0.88	1.23	1.39	1.68	1.89	2.02	8.31	7.08	51.29	43.03	59.60	50.11	303.06
YER092W	IES5	0.91	1.39	1.56	1.89	2.03	2.13	15.39	3.67	53.46	18.44	68.85	22.11	343.79
YER093C-A	AIM11	0.89	1.29	1.46	1.85	2.02	2.15	15.52	4.71	53.37	28.24	68.89	32.95	337.74
YER095W	RAD51	0.88	1.22	1.34	1.66	1.88	2.05	13.73	4.97	54.27	30.26	67.99	35.23	362.88
YER096W	SHC1	0.93	1.30	1.51	1.93	2.09	2.21	11.21	3.57	49.89	21.84	61.10	25.41	316.25
YER097W	YER097w	0.84	1.18	1.24	1.59	1.79	1.93	11.85	3.29	47.91	14.33	59.76	17.62	330.55
YER098W	UBP9	0.91	1.31	1.45	1.87	2.05	2.18	17.82	5.13	58.48	30.17	76.30	35.30	345.15
YER099C	PRS2	0.87	1.15	1.30	1.69	1.91	2.11	0.44	1.27	9.59	17.50	10.03	18.77	252.55
YER101C	AST2	0.91	1.13	1.31	1.77	2.09	2.14	7.35	6.67	52.56	43.40	59.91	50.07	300.51
YER103W	SSA4	0.96	1.03	1.03	0.96	0.98	0.94	134.68	159.74	132.18	150.63	266.86	310.37	275.72
YER105C	NUP157	0.91	1.19	1.33	1.77	1.96	2.09	5.19	6.00	48.44	36.46	53.64	42.47	287.93
YER106W	MAM1	0.99	1.14	1.29	1.68	1.89	2.06	7.04	11.28	49.60	53.87	56.63	65.15	295.80
YER108C	YER108C	0.89	1.04	1.17	1.62	1.86	2.01	9.29	11.20	54.84	55.20	64.13	66.39	309.81
YER109C	FLO8	0.93	1.11	1.24	1.71	1.97	2.12	9.18	11.38	54.39	55.25	63.57	66.63	305.45
YER109C	FLO8	0.95	1.33	1.55	1.91	2.06	2.18	4.48	0.96	42.16	8.95	46.64	9.91	288.25
YER110C	KAP123	0.91	0.98	0.97	0.91	0.91	0.88	133.35	152.07	130.97	143.49	264.32	295.56	273.19

ORF.name	Strain	Optical density at 600 nm at regular intervals (h)						GLUCOSE		FRUCTOSE		TOTAL SUGARS (g/l)		TOTAL AMINO ACIDS (mg/L)
		0	26	33	48	59	78	102 h	118 h	102 h	118 h	102 h	118 h	102 h
YER111C	SWI4	0.97	1.10	1.28	1.74	1.99	2.15	19.13	1.64	70.33	21.30	89.47	22.94	324.26
YER113C	TMN3	1.02	1.22	1.45	1.90	2.11	2.23	20.33	1.59	71.94	24.03	92.27	25.62	336.19
YER114C	BOI2	0.98	1.22	1.45	1.92	2.12	2.25	14.84	5.64	65.25	45.10	80.09	50.73	322.79
YER115C	SPR6	1.00	1.23	1.44	1.84	2.06	2.19	13.40	9.36	62.88	55.18	76.29	64.55	306.23
YER116C	SLX8	0.90	1.07	1.18	1.54	1.79	1.99	28.96	26.58	86.47	84.36	115.43	110.93	322.18
YER117W	RPL23b	0.89	1.08	1.26	1.70	1.93	2.09	9.87	6.75	59.50	46.82	69.37	53.57	302.76
YER118C	SHO1	0.92	1.13	1.32	1.73	1.97	2.14	5.04	1.21	39.40	16.12	44.43	17.33	310.84
YER119C	AVT6	0.89	1.06	1.19	1.61	1.87	2.07	8.61	1.85	51.15	23.65	59.76	25.50	327.15
YER119C-A	YER119c-a	0.93	1.07	1.21	1.61	1.84	2.01	24.05	12.58	76.02	59.74	100.07	72.32	335.06
YER120W	SCS2	0.90	1.07	1.20	1.63	1.83	1.99	17.74	9.93	72.25	52.88	89.99	62.81	320.52
YER121W	YER121w	0.93	1.11	1.26	1.75	2.01	2.11	5.69	4.28	47.94	40.03	53.63	44.31	285.00
YER122C	GLO3	0.99	1.11	1.12	1.02	1.03	0.99	125.63	123.51	139.90	108.97	265.53	232.49	344.21
YER123W	YCK3	0.97	1.17	1.34	1.69	1.98	2.14	12.18	0.92	61.76	13.21	73.93	14.13	336.47
YER124C	DSE1	0.92	1.08	1.27	1.69	1.93	2.10	20.82	1.26	77.56	19.84	98.38	21.11	339.47
YER126W	YER126w	1.02	1.16	1.39	1.86	2.09	2.21	18.34	1.45	66.57	23.07	84.91	24.52	328.48
YER129W	SAK1	1.02	1.30	1.53	1.96	2.14	2.26	20.04	6.06	75.19	44.63	95.23	50.69	329.09
YER130C	YER130c	0.95	1.18	1.34	1.70	1.95	2.11	5.86	7.93	46.59	51.34	52.45	59.28	301.91
YER131W	RPS26b	0.99	1.17	1.35	1.81	2.07	2.20	13.65	12.34	61.22	57.86	74.87	70.20	323.21
YER132C	PMD1	1.01	1.22	1.44	1.81	2.03	2.15	21.73	14.73	76.23	65.37	97.96	80.10	317.16
YER134C	YER134c	0.93	1.23	1.47	1.95	2.12	2.25	16.24	9.58	64.99	52.36	81.22	61.94	330.68
YER135C	YER135c	1.00	1.25	1.44	1.85	2.03	2.15	18.59	13.75	68.23	59.51	86.82	73.26	336.23
YER137C	YER137c	0.97	1.10	1.24	1.66	1.89	2.09	15.32	13.03	66.33	60.64	81.65	73.67	326.18
YER139C	RTR1	0.91	1.05	1.14	1.59	1.86	2.10	21.86	15.36	76.50	65.61	98.36	80.97	320.52
YER140W	YER140w	0.90	1.10	1.23	1.66	1.88	2.00	24.78	11.63	76.64	60.64	101.42	72.27	343.17
YER141W	COX15	0.97	1.13	1.27	1.63	1.94	2.11	19.74	1.59	71.14	25.61	90.88	27.20	333.49
YER142C	MAG1	0.96	1.16	1.40	1.85	2.06	2.18	16.22	1.10	66.82	17.77	83.04	18.87	332.84
YER143W	DDI1	1.04	1.19	1.41	1.88	2.10	2.24	17.23	3.01	68.20	38.63	85.43	41.64	333.40
YER144C	UBP5	0.95	1.33	1.38	1.84	2.00	2.12	17.59	7.67	68.91	47.69	86.50	55.36	333.18
YER145C	FTR1	0.97	1.17	1.36	1.73	1.99	2.14	5.91	1.64	50.94	28.28	56.84	29.92	312.17
YER149C	PEA2	0.98	1.30	1.53	1.87	2.08	2.21	0.72	0.74	9.36	8.29	10.08	9.03	271.67
YER150W	SPI1	0.94	1.23	1.44	1.86	2.06	2.19	4.82	4.23	42.25	39.58	47.07	43.81	291.21
YER151C	UBP3	0.93	1.09	1.22	1.67	1.94	2.17	1.58	2.00	24.95	28.90	26.53	30.90	276.10
YER152C	YER152c	0.93	1.14	1.33	1.76	1.97	2.13	6.73	5.55	51.50	45.63	58.23	51.18	302.25
YER153C	PET122	0.97	1.02	1.03	0.96	0.96	0.92	135.67	136.96	133.66	134.58	269.34	271.54	321.64
YER154W	OXA1	0.98	1.02	1.03	0.95	0.96	0.92	133.20	141.30	127.69	138.06	260.89	279.36	311.55
YER155C	BEM2	0.99	1.16	1.30	1.74	1.95	2.16	5.60	4.20	43.88	36.91	49.49	41.11	286.06
YER155C	BEM2	0.89	1.19	1.24	1.59	1.88	2.18	0.49	1.32	18.49	11.87	18.97	13.19	200.02
YER155C	BEM2	0.93	1.24	1.28	1.59	1.94	2.20	3.92	2.31	32.87	19.28	36.79	21.60	212.79
YER156C	YER156c	0.90	1.08	1.20	1.58	1.83	1.98	31.37	24.81	82.93	77.06	114.30	101.87	335.55
YER158C	YER158c	0.99	1.18	1.38	1.94	2.06	2.18	16.03	1.75	63.10	17.92	79.12	19.68	337.31
YER161C	SPT2	1.01	1.20	1.39	1.78	2.05	2.15	25.05	20.08	78.19	70.23	103.24	90.32	360.51
YER162C	RAD4	0.93	1.16	1.36	1.70	1.97	2.11	7.49	2.23	54.05	32.57	61.54	34.79	307.24
YER163C	YER163c	1.04	1.29	1.53	1.97	2.16	2.29	7.51	2.83	53.59	36.28	61.10	39.10	303.35
YER164W	CHD1	0.99	1.16	1.31	1.72	1.96	2.14	16.04	10.45	68.77	59.71	84.81	70.16	311.40
YER166W	DNF1	1.09	1.17	1.31	1.67	1.87	2.07	7.02	5.40	54.03	46.79	61.04	52.19	296.50
YER167W	BCK2	1.00	1.20	1.35	1.69	1.85	1.94	42.85	35.51	91.11	82.11	133.96	117.63	369.60
YER169W	RPH1	0.93	1.05	1.06	0.98	0.99	0.96	149.34	147.33	143.82	144.09	293.16	291.41	308.26
YER170W	ADK2	1.00	1.20	1.35	1.84	2.05	2.20	15.46	11.86	65.44	57.75	80.90	69.61	323.45
YER173W	RAD24	0.97	1.10	1.25	1.64	1.86	2.01	12.93	7.27	65.00	49.12	77.93	56.39	322.39
YER174C	GRX4	0.95	1.16	1.37	1.81	2.00	2.09	15.95	11.60	64.92	58.75	80.86	70.35	327.26
YER175C	TMT1	0.90	1.07	1.19	1.58	1.80	1.93	14.34	1.30	56.37	19.49	70.70	20.79	285.43
YER175W-A	YER175w-a	0.88	1.12	1.25	1.60	1.80	1.94	14.47	2.79	63.13	24.09	77.60	26.88	322.35
YER176W	ECM32	0.90	1.10	1.24	1.65	1.86	2.00	9.66	2.43	49.34	26.47	59.00	28.90	304.54
YER177W	BMH1	0.85	1.00	1.06	1.29	1.49	1.67	1.75	0.79	28.12	3.78	29.87	4.57	297.58
YER178W	PDA1	0.93	1.15	1.31	1.73	1.93	2.07	10.11	0.94	48.57	9.36	58.67	10.30	302.73
YER179W	DMC1	0.85	1.02	1.11	1.43	1.67	1.89	0.71	0.80	13.82	1.96	14.53	2.76	265.91
YER180C	ISC10	0.98	1.24	1.43	1.84	2.02	2.14	11.89	1.94	53.87	23.34	65.76	25.28	287.27
YER180C-A	SLO1	0.91	1.21	1.32	1.68	1.88	2.02	14.64	6.21	66.64	36.48	81.28	42.69	321.78
YER181C	YER181c	0.92	1.08	1.17	1.81	1.67	1.81	0.57	1.03	13.49	2.29	14.07	3.32	302.90
YER182W	FMP10	0.93	1.17	1.34	1.78	1.97	2.09	14.24	5.63	58.74	37.94	72.98	43.57	296.24
YER183C	FAU1	0.90	1.09	1.26	1.72	2.05	2.01	8.63	3.30	47.23	28.17	55.85	31.46	286.80
YER184C	YER184c	0.90	1.07	1.17	1.59	2.05	1.98	0.63	0.75	17.42	3.96	18.04	4.71	278.25
YER185W	PUG1	0.87	1.06	1.21	1.64	1.96	1.98	4.57	1.15	36.66	12.52	41.23	13.68	283.29
YER186C	YER186c	0.90	1.11	1.26	1.66	1.86	1.98	1.18	1.15	21.04	18.52	22.22	19.67	275.19
YER186W-A	Unknown	0.89	1.14	1.27	1.69	1.91	2.04	3.56	7.48	43.69	39.62	47.25	47.10	277.54
YER187W	YER187w	0.98	1.24	1.44	1.87	2.06	2.17	9.30	1.00	49.40	8.16	58.70	9.16	286.76
YER188W	YER188w	0.94	1.21	1.31	1.71	1.88	2.03	12.33	3.94	56.52	25.15	68.85	29.10	332.90
YFL001W	DEG1	1.03	1.26	1.39	1.71	1.92	2.09	39.11	22.73	86.18	71.05	125.29	93.78	345.56
YFL003C	MSH4	0.95	1.22	1.42	1.85	2.03	2.20	15.68	1.59	61.73	21.03	77.41	22.62	335.74
YFL004W	VTC2	0.93	1.17	1.34	1.71	1.90	2.09	13.30	1.47	57.88	21.83	71.18	23.30	319.86
YFL006W	YFL006w	0.93	1.32	1.49	1.89	2.07	2.17	14.07	8.50	54.00	42.13	68.07	50.63	335.66
YFL007W	BLM10	0.97	1.31	1.55	1.91	2.11	2.32	0.79	0.78	7.49	0.57	8.27	1.35	276.52
YFL010C	WWM1	0.97	1.28	1.53	1.92	2.08	2.23	13.38	1.35	56.51	19.19	69.88	20.54	325.32
YFL010W-A	AUA1	0.89	1.13	1.31	1.68	1.90	2.13	1.09	0.81	16.97	1.28	18.06	2.08	280.03
YFL010W-A	AUA1	0.96	1.31	1.50	1.88	2.06	2.20	1.96	1.05	26.64	12.39	28.60	13.44	264.40
YFL011W	HXT10	0.93	1.33	1.50	1.96	2.04	2.09	1.67	1.25	22.97	2.38	24.63	3.63	284.64
YFL012W	YFL012w	0.94	1.18	1.38	1.77	1.94	2.10	7.62	1.83	47.58	23.64	55.20	25.46	303.09
YFL013C	IES1	0.93	1.21	1.42	1.75	1.94	2.10	0.79	0.74	6.44	1.24	7.23	1.97	242.86
YFL013W-A	Unknown	0.95	1.28	1.53	1.90	2.09	2.22	1.21	3.84	16.08	31.34	17.29	35.18	272.98
YFL014W	HSP12	0.98	1.27	1.50	1.87	2.06	2.20	1.00	2.13	8.29	23.30	9.29	25.43	218.59
YFL015C	YFL015c	0.90	1.28	1.43	1.81	1.98	2.11	8.77	3.26	45.30	22.38	54.07	25.64	317.13
YFL016C	MDJ1	0.92	1.13	1.09	0.97	0.97	0.90	118.57	119.98	141.32	108.80	259.89	228.78	470.78
YFL018C	LPD1	0.91	1.07	1.26	1.64	1.88	2.04	3.02	1.02	34.08	10.43	38.10	11.47	295.61
YFL019C	YFL019c	0.93	1.16	1.37	1.81	2.00	2.14	2.12	8.50	28.38	47.69	30.50	56.19	287.53
YFL020C	PAU5	0.89	1.28	1.46	1.86	2.06	2.18	9.34	5.47	42.22	30.60	51.56	36.07	316.32
YFL021W	GAT1	0.89	1.29	1.44	1.75	1.95	2.12	4.15	2.06	40.99	11.42	45.14	13.48	283.55
YFL023W	BUD27	0.88	1.15	1.16	1.43	1.71	1.92	14.63	7.71	56.66	40.84	71.29	48.56	320.27
YFL025C	BST1	0.87	1.13	1.16	1.44	1.65	1.84	8.50	5.71	41.20	30.22	49.70	35.93	314.36
YFL026W	STE2	0.93	1.27	1.41	1.77	1.94	2.07	14.69	10.20	54.00	44.58	68.69	54.78	345.25
YFL027C	GYP8	0.89	1.27	1.43	1.80	1.97	2.09	11.09	8.90	47.19	42.07	58.28	50.97	331.03
YFL028C	CAF16	0.87	1.19	1.30	1.64	1.80	1.95	13.18	13.18	53.85	51.05	67.03	64.23	329.20
YFL030W	AGX1	0.88	1.24	1.41	1.78	1.95	2.07	10.62	8.87	49.33	42.32	59.95	51.19	326.46
YFL031W	HAC1	0.91	1.28	1.45	1.85	2.01	2.12	13.63	9.30	52.99	42.85	66.62	52.15	336.40
YFL031W	HAC1	0.92	1.24	1.42	1.80	1.97	2.13	6.20	1.66	50.75	18.33	56.95	20.00	286.74
YFL032W	YFL032w	0.85	1.16	1.29	1.65	1.87	2.02	3.46	2.74	17.34	9.31	20.80	12.05	289.60
YFL033C	RIM15	0.91	1.14	1.34	1.78	2.04	2.20	0.68	0.74	5.55	2.03	6.24	2.77	257.26
YFL033C	RIM15	1.00	1.26	1.46	1.90	2.10	2.23	2.22	0.68	24.96	3.92	27.18	4.59	295.54
YFL034C-A	RPL22b	1.00	1.28	1.44	1.88	2.05	2.20	15.99	3.86	64.16	23.30	80.15	27.16	328.94
YFL034W	YFL034w	0.92	1.25	1.35	1.69	1.90	2.08	3.00	2.96	4.63	2.90	7.63	5.86	283.14
YFL035C-B	YFL035C-B	0.88	1.20	1.33	1.70	1.89	2.05	7.76	5.35	38.56	29.03	46.32	34.37	311.93
YFL036W	RPO41	0.94	1.12	1.11	0.95	0.95	0.88	134.12	122.06	131.16	121.16	265.29	243.21	551.35
YFL040W	YFL040w	0.87	1.21	1.33	1.70	1.89	2.02	14.77	8.28	55.77	42.71	70.54	51.00	336.12
YFL041W	FET5	0.94	1.34	1.51	1.85	2.05	2.17	5.20	3.54	31.64	20.14	36.84	23.68	304.92
YFL041W-A	YFL041w-a	0.93	1.26	1.45	1.84	2.01	2.12	6.28	1.74	48.50	20.65	54.78	22.39	297.73
YFL042C	YFL042c	0.94	1.12	1.30	1.69	1.88	2.05	2.70	5.24	32.06	40.68	34.76	45.92	247.29
YFL042C	YFL042c	0.93	1.34	1.55	1.88	2.02	2.17	13.57	7.69	61.30	37.04	74.87	44.73	313.14
YFL043C	YFL043C	0.97	1.43	1.66	2.01	2.16	2.26	10.47	7.89	47.38	40.79	57.84	48.68	320.20
YFL044C	OTU1	1.01	1.49	1.67	2.03	2.18	2.28	8.71	6.66	44.02	37.73	52.73	44.39	318.23
YFL046W	FMP32	0.95	1.44	1.63	1.97	2.12	2.24	7.66	7.16	41.87	37.58	49.53	44.74	311.33
YFL047W	RGD2	0.91	1.28	1.39	1.68	1.87	2.01	4.59	3.20	26.72	13.06	31.30	16.25	299.90
YFL048C	EMP47	0.86	1.18	1.32	1.69	1.87	2.01	13.08	7.34	51.58	37.49	64.66	44.83	332.70
YFL049W	SWP82	0.89	1.21	1.36	1.75	1.94	2.07	8.43	6.68	44.14	34.87	52.57	41.54	330.08
YFL050C	ALR2	0.87	1.22	1.34	1.75	1.94	2.06	10.97	9.10	49.02	42.57	59.99	51.67	324.95
YFL051C	YFL051c	0.94	1.26	1.38	1.79	1.99	2.10	9.87	4.51	47.21	29.83	57.08	34.35	311.30
YFL052W	YFL052w	0.86	1.16	1.31	1.78	1.98	2.11	15.37	6.65	56.98	37.31	72.35	43.96	344.39
YFL053W	DAK2	0.88	1.21	1.31	1.65	1.84	1.96	11.90	7.09	51.41	39.78	63.32	46.88	325.24
YFL054C	YFL054c	0.88	1.25	1.40	1.75	1.93	2.07	11.22	8.73	50.00	44.33	61.22	53.05	325.52
YFL055W	AGP3	0.90	1.26	1.41	1.77	1.96	2.10	10.93	6.20	48.83	34.27	59.76	40.47	322.37
YFL056C	AAD6	0.91	1.29	1.43	1.74	1.90	2.04	10.67	9.65	50.13	46.08	60.79	55.73	320.59
YFL063W	YFL063w	1.00	1.34	1.56	1.92	2.08	2.18	12.93	4.73	39.98	32.93	52.91	37.67	312.29
YFR001W	LOC1	1.02	1.42	1.58	2.00	2.18	2.29	5.70	5.11	32.68	29.67	38.38	34.78	290.72
YFR006W	YFR006w	0.93	1.36	1.53	2.00	2.04	2.14	8.95	6.79	42.37	35.50	51.32	42.29	316.67
YFR007W	YFH7	0.92	1.36	1.53	1.89	2.06	2.18	10.23	5.63	47.25	32.96	57.48	38.59	324.74
YFR008W	FAR7	0.93	1.27	1.40	1.77	1.93	2.09	10.15	10.38	51.41	50.94	61.57	61.31	299.14
YFR009W	GCN20	0.90	1.17	1.23	1.58	1.80	1.95	21.09	15.20	64.09	55.55	85.19	70.76	347.04
YFR010W	UBP6	0.88	1.21	1.35	1.73	1.91	2.04	19.08	8.53	61.44	44.11	80.52	52.64	344.65
YFR011C	AIM13	0.97	1.13	1.35	1.89	2.07	2.22	17.71	4.42	71.45	43.43	89.16	47.85	265.49
YFR012W	YFR012w	0.96	1.27	1.38	1.87	2.08	2.20	5.73	3.15	45.20	20.88	50.93	24.02	317.44
YFR012W-A	YFR012w-a	0.88	1.18	1.28	1.60	1.80	1.96	9.72	2.48	55.49	24.29	65.20	26.77	304.49
YFR013W	IOC3	0.91	1.00	1.15	1.64	1.85	2.05	9.97	2.01	59.36	31.55	69.33	33.56	262.72
YFR014C	CMK1	0.98	1.41	1.61	1.98	2.16	2.25	17.60	10.37	57.73	45.28	75.34	55.66	350.50
YFR015C	GSY1	0.92	1.30	1.45	1.81	2.00	2.12	12.56	11.15	52.17	48.65	64.73	59.81	330.39
YFR016C	YFR016c	0.96	1.42	1.61	1.98	2.14	2.25	7.33	7.66	42.27	41.98	49.60	49.64	314.96
YFR017C	YFR017c	0.95	1.41	1.60	1.96	2.11	2.22	7.18	5.94	40.64	34.84	47.83	40.78	299.35

ORF.name	Strain	Optical density at 600 nm at regular intervals (h)						GLUCOSE		FRUCTOSE		TOTAL SUGARS (g/l)		TOTAL AMINO ACIDS (mg/L)
		0	26	33	48	59	78	102 h	118 h	102 h	118 h	102 h	118 h	102 h
YFR018C	YFR018c	0.98	1.45	1.64	2.00	2.15	2.25	10.57	10.49	50.20	47.44	60.77	57.93	321.78
YFR019W	FAB1	0.92	1.12	1.30	1.64	1.80	1.91	14.25	12.61	63.69	58.55	77.94	71.17	296.95
YFR020W	YFR020w	1.03	1.58	1.79	2.09	2.27	2.24	3.45	3.91	21.07	24.07	24.51	27.97	290.13
YFR021W	ATG18	0.96	1.39	1.57	1.91	2.05	2.19	17.61	16.06	61.12	54.35	78.73	70.41	327.17
YFR022W	ROG3	1.03	1.55	1.77	2.10	2.24	2.31	9.35	10.42	48.01	49.83	57.36	60.24	313.33
YFR023W	PES4	0.92	1.26	1.41	1.77	1.98	2.12	7.14	8.05	39.76	40.01	46.90	48.06	310.52
YFR024C	YFR024C	0.92	1.14	1.35	1.81	1.97	2.08	7.35	1.99	48.68	27.00	56.02	28.98	287.51
YFR024C-A	LSB3	0.89	1.27	1.38	1.76	1.95	2.03	13.64	9.87	53.17	44.77	66.81	54.64	321.42
YFR025C	HIS2	0.83	1.08	1.12	1.42	1.66	1.86	7.95	2.00	51.09	20.39	59.04	22.39	315.83
YFR026C	ULI1	0.88	1.23	1.38	1.79	2.02	2.14	9.26	3.10	44.65	11.50	53.91	14.60	344.44
YFR030W	MET10	0.93	1.15	1.38	1.85	2.08	2.24	0.99	0.67	17.11	2.25	18.09	2.92	298.89
YFR031C-A	RPL2a	1.00	1.39	1.54	1.96	2.14	2.24	16.78	10.01	57.12	48.21	73.89	58.22	358.73
YFR032C	RRT5	1.00	1.32	1.47	1.89	2.04	2.20	13.49	3.75	61.05	23.25	74.54	27.00	329.05
YFR032C-A	RPL29	0.99	1.26	1.39	1.79	1.96	2.15	16.73	3.74	66.29	23.78	83.01	27.52	331.35
YFR032C-B	YFR032c-b	0.85	1.17	1.28	1.62	1.85	2.00	9.66	1.73	54.96	21.52	64.63	23.25	305.33
YFR033C	QCR6	1.02	1.44	1.66	2.08	2.20	2.31	6.91	3.20	44.86	8.21	51.76	11.41	297.90
YFR034C	PHO4	0.95	1.19	1.30	1.82	2.00	2.18	9.90	3.50	51.07	19.03	60.97	22.53	308.99
YFR035C	YFR035c	1.01	1.39	1.52	1.92	2.08	2.25	4.25	3.18	28.85	9.35	33.09	12.52	294.35
YFR036W	CDC26	1.05	1.39	1.51	1.93	2.07	2.24	9.70	3.77	53.40	21.17	63.10	24.93	311.55
YFR038W	IRC5	1.09	1.46	1.61	2.04	2.19	2.31	14.87	4.07	59.39	25.68	74.26	29.75	330.77
YFR038W	IRC5	0.92	1.29	1.46	1.86	2.05	2.19	3.80	1.83	37.97	18.05	41.77	19.88	269.53
YFR039C	YFR039c	0.86	1.01	1.19	1.63	1.86	2.04	2.75	0.92	35.22	15.34	37.97	16.26	291.12
YFR040W	SAP155	0.99	1.30	1.41	1.85	2.01	2.18	11.11	5.93	52.32	40.06	63.44	46.00	307.90
YFR041C	ERJ5	0.97	1.24	1.37	1.87	2.04	2.21	15.79	5.57	60.24	35.53	76.03	41.10	328.38
YFR043C	IRC6	1.08	1.54	1.64	2.04	2.16	2.27	6.50	3.21	40.10	12.92	46.60	16.13	300.17
YFR044C	DUG1	0.96	1.20	1.30	1.74	1.94	2.15	6.70	2.85	42.09	10.50	48.79	13.35	305.18
YFR045W	YFR045w	1.00	1.31	1.49	1.92	2.09	2.26	3.34	2.92	16.63	3.70	19.97	6.62	296.40
YFR045W	YFR045w	0.91	1.27	1.49	1.89	2.05	2.20	6.13	2.04	45.41	18.70	51.54	20.75	293.67
YFR046C	CNN1	1.00	1.22	1.25	1.66	1.91	2.15	29.49	11.25	84.85	61.32	114.34	72.57	353.43
YFR047C	BNA6	0.94	1.23	1.36	1.79	1.96	2.13	10.60	3.08	55.41	14.03	66.02	17.11	320.25
YFR048W	RMD8	1.04	1.45	1.68	2.07	2.18	2.30	20.09	4.54	66.19	30.59	86.27	35.13	309.63
YFR049W	YMR31	0.92	1.14	1.26	1.79	2.00	2.21	3.34	3.08	12.44	2.46	15.78	5.54	287.00
YFR053C	HXK1	0.96	1.29	1.44	1.87	2.02	2.19	6.84	3.54	72.43	60.75	79.27	64.29	322.69
YFR054C	YFR054c	0.97	1.30	1.46	1.91	2.05	2.22	9.15	3.43	48.72	16.12	57.86	19.55	311.48
YFR055W	IRC7	0.97	1.25	1.37	1.79	1.96	2.15	9.22	3.47	49.14	18.93	58.37	22.40	316.05
YFR056C	YFR056c	1.04	1.35	1.48	1.94	2.09	2.25	11.00	4.47	51.28	29.57	62.27	34.04	318.42
YFR057W	YFR057w	0.96	1.22	1.32	1.81	2.00	2.19	10.13	4.39	51.10	31.56	61.23	35.95	315.20
YGL002W	ERP6	0.89	1.16	1.26	1.68	1.86	2.04	5.48	4.17	36.91	28.33	42.39	32.51	307.94
YGL003C	CDH1	0.94	1.23	1.30	1.73	1.92	2.10	26.71	15.55	73.01	59.97	99.72	75.52	359.04
YGL004C	RPN14	1.01	1.36	1.52	1.95	2.11	2.25	8.94	4.61	46.80	31.01	55.74	35.61	320.01
YGL005C	COG7	0.95	1.28	1.44	1.82	1.98	2.12	8.02	4.71	43.97	30.12	51.99	34.83	314.76
YGL006W	PMC1	0.99	1.36	1.53	1.89	2.06	2.20	4.46	3.17	30.25	12.21	34.71	15.38	301.60
YGL006W-A	YGL006w-a	0.83	1.09	1.20	1.59	1.91	1.86	11.87	3.41	64.89	28.87	76.76	32.28	306.49
YGL007C-A	YGL007c-a	0.87	1.11	1.17	1.33	1.43	1.52	45.90	35.83	97.34	71.28	143.24	107.11	366.72
YGL007W	YGL007w	0.91	1.19	1.30	1.50	1.59	1.68	48.82	40.69	88.55	82.62	137.37	123.31	411.90
YGL010W	YGL010w	0.93	1.22	1.38	1.70	1.85	2.02	6.91	4.09	40.31	25.22	47.22	29.31	303.44
YGL012W	ERG4	0.93	1.36	1.49	1.84	2.00	2.09	8.42	1.64	52.37	16.09	60.79	17.73	337.35
YGL012W	ERG4	0.83	1.06	1.08	1.31	1.60	1.71	24.82	6.96	72.35	42.17	97.17	49.13	360.63
YGL013C	PDR1	0.97	1.25	1.39	1.81	1.99	2.14	6.37	3.56	39.14	21.43	45.51	24.99	302.27
YGL014W	PUF4	0.92	1.16	1.25	1.64	1.83	1.98	10.46	4.16	51.05	28.66	61.51	32.82	308.28
YGL015C	YGL015c	0.92	1.06	1.01	1.10	1.40	1.55	44.26	51.30	88.87	90.24	133.12	141.54	381.37
YGL016W	KAP122	0.93	1.29	1.38	1.77	1.96	2.12	5.19	3.09	20.33	9.18	25.53	12.28	274.54
YGL017W	ATE1	0.95	1.34	1.47	1.85	1.99	2.12	11.25	6.71	49.12	38.61	60.37	45.32	296.95
YGL019W	CKB1	1.01	1.30	1.37	1.76	1.91	2.07	20.60	13.11	63.71	52.35	84.31	65.46	373.97
YGL020C	GET1	0.98	1.20	1.37	1.76	2.00	2.19	1.03	0.72	1.74	0.39	2.77	1.11	294.10
YGL021W	ALK1	0.97	1.35	1.50	1.88	2.04	2.18	5.80	3.42	36.42	17.28	42.22	20.70	296.75
YGL023C	PIB2	0.90	1.20	1.40	1.74	1.96	2.15	1.15	0.79	5.39	1.63	6.55	2.42	279.16
YGL023C	PIB2	1.02	1.42	1.56	1.89	2.04	2.17	23.48	16.47	67.61	58.64	91.09	75.11	350.83
YGL024W	YGL024w	0.97	1.34	1.47	1.81	1.98	2.13	20.38	13.47	63.73	50.24	84.10	63.71	347.63
YGL025C	PGD1	0.89	1.15	1.23	1.56	1.74	1.92	5.78	3.41	37.97	19.68	43.75	23.09	301.48
YGL026C	TRP5	0.95	1.43	1.60	1.90	2.07	2.17	2.50	1.12	31.64	5.78	34.14	6.90	271.60
YGL026C	TRP5	0.82	0.97	0.95	0.79	0.91	1.21	16.08	5.18	69.75	40.61	85.84	45.80	316.83
YGL027C	CWH41	0.99	1.31	1.46	1.88	2.06	2.20	3.60	3.24	21.12	14.85	24.72	18.08	276.72
YGL028C	SCW11	0.91	1.16	1.24	1.60	1.79	1.94	11.79	4.86	52.69	31.03	64.48	35.89	318.91
YGL029W	CGR1	0.85	1.08	1.20	1.65	1.89	2.05	1.41	0.79	13.96	1.87	15.37	2.66	264.10
YGL031C	RPL24a	0.93	1.42	1.49	1.86	2.05	2.19	3.55	3.28	24.70	8.29	28.25	11.57	296.21
YGL032C	AGA2	0.93	1.45	1.53	1.85	2.00	2.11	17.69	8.93	64.24	44.74	81.93	53.67	342.46
YGL032C	AGA2	0.94	1.26	1.48	1.86	2.06	2.18	2.65	1.08	30.21	10.97	32.86	12.05	270.00
YGL033W	HOP2	0.95	1.35	1.34	1.77	1.97	2.12	17.60	8.59	66.20	44.44	83.80	53.03	303.87
YGL033W	HOP2	0.95	1.30	1.51	1.93	2.09	2.22	6.90	1.21	50.22	12.35	57.12	13.56	297.29
YGL034C	YGL034c	0.95	1.51	1.63	1.99	2.12	2.23	7.83	5.04	47.15	29.85	54.98	34.88	323.42
YGL035C	MIG1	0.97	1.45	1.55	2.00	2.16	2.28	10.39	3.76	51.05	27.25	61.44	31.01	330.94
YGL036W	YGL036w	0.91	1.29	1.39	1.78	1.95	2.08	8.14	4.31	45.23	27.83	53.37	32.14	312.38
YGL037C	PNC1	0.99	1.42	1.55	1.97	2.13	2.24	17.96	11.60	64.65	53.09	82.61	64.70	348.93
YGL038C	OCH1	0.86	1.05	1.01	0.89	0.96	0.94	116.80	115.56	119.69	116.56	236.49	232.12	517.53
YGL039W	YGL039w	0.93	1.38	1.48	1.86	2.01	2.11	27.36	13.52	75.23	58.14	102.59	71.65	360.45
YGL041C	YGL041c	0.91	1.33	1.43	1.83	2.00	2.12	13.85	8.22	58.38	44.99	72.23	53.21	335.87
YGL041C-B	YGL041c-b	0.91	1.15	1.23	1.51	1.81	2.04	26.77	14.16	83.67	50.99	110.44	65.15	329.02
YGL042C	YGL042c	0.92	1.32	1.40	1.80	1.98	2.09	36.40	30.93	83.52	79.37	119.92	110.30	375.47
YGL043W	DST1	0.99	1.40	1.43	1.80	2.00	2.14	33.35	36.41	86.77	83.76	120.12	120.17	343.44
YGL045W	RIM8	0.97	1.52	1.55	2.02	2.16	2.29	9.68	3.37	52.66	20.30	62.34	23.67	317.56
YGL045W	RIM8	0.82	1.19	1.33	1.68	1.86	1.98	8.11	2.20	51.51	21.97	59.62	24.17	297.47
YGL046W	YGL046W	0.87	1.32	1.40	1.74	1.91	2.03	13.96	7.44	62.23	43.06	76.18	50.51	335.38
YGL049C	TIF4632	0.89	1.38	1.50	1.85	2.02	2.15	16.84	10.74	61.08	47.72	77.92	58.46	349.04
YGL050W	TYW3	0.95	1.53	1.67	2.03	2.17	2.28	10.22	3.34	49.19	16.16	59.41	19.50	329.94
YGL051W	MST27	0.94	1.47	1.57	1.94	2.09	2.20	20.06	4.68	63.51	28.23	83.58	32.91	357.54
YGL053W	PRM8	1.02	1.59	1.73	2.11	2.23	2.34	14.26	7.70	59.80	40.67	74.06	48.37	331.85
YGL054C	ERV14	0.96	1.53	1.69	2.04	2.14	2.23	22.10	10.72	66.58	45.86	88.68	56.59	329.56
YGL056C	SDS23	0.95	1.43	1.59	2.00	2.16	2.29	5.24	4.71	33.35	24.61	38.59	29.32	306.84
YGL057C	GEP7	0.96	1.43	1.61	2.03	2.17	2.28	15.98	5.38	61.32	31.06	77.29	36.43	332.68
YGL058W	RAD6	0.89	1.25	1.31	1.67	1.85	2.00	31.78	20.00	85.55	71.07	117.33	91.07	357.04
YGL059W	PKP2	0.95	1.38	1.47	1.84	2.00	2.12	13.98	5.89	59.22	34.70	73.20	40.59	330.08
YGL060W	YBP2	0.98	1.41	1.47	1.97	2.16	2.29	20.92	11.03	68.24	52.52	89.16	63.55	336.62
YGL062W	PYC1	0.94	1.35	1.49	1.83	2.04	2.20	1.21	1.01	2.90	0.72	4.11	1.73	238.82
YGL062W	PYC1	0.93	1.19	1.12	1.05	1.09	1.23	58.02	38.36	107.66	89.47	165.68	127.83	365.64
YGL063W	PUS2	1.02	1.57	1.76	2.10	2.23	2.34	4.21	3.80	31.52	12.69	35.73	16.49	311.67
YGL064C	MRH4	0.98	1.26	1.20	1.13	1.13	1.06	115.46	108.63	122.25	120.60	237.72	229.23	516.59
YGL066W	SGF73	0.97	1.42	1.43	1.72	1.89	2.05	21.20	4.27	81.11	43.93	102.31	48.21	352.48
YGL067W	NPY1	0.98	1.51	1.59	1.97	2.12	2.25	14.69	6.60	59.32	37.40	74.01	44.00	339.24
YGL070C	RPB9	0.96	1.16	1.32	1.71	2.00	2.20	1.14	0.70	12.24	4.92	13.38	5.62	286.86
YGL071W	AFT1	0.97	1.34	1.35	1.66	1.85	2.02	31.61	21.81	81.70	72.46	113.31	94.27	340.98
YGL072C	YGL072c	1.02	1.38	1.40	1.73	1.90	2.05	30.87	20.42	79.12	64.70	109.99	85.12	310.80
YGL076C	RPL7a	0.95	1.33	1.35	1.77	2.00	2.14	36.16	25.92	89.69	76.54	125.84	102.46	368.56
YGL077C	HNM1	0.96	1.39	1.47	1.86	2.02	2.15	16.57	10.37	57.39	49.71	73.97	60.09	335.50
YGL078C	DBP3	0.94	1.37	1.45	1.85	2.03	2.18	12.92	4.68	61.61	32.23	74.53	36.91	329.37
YGL079W	YGL079w	1.01	1.47	1.54	1.95	2.12	2.23	23.08	4.35	72.62	29.52	95.70	33.87	344.13
YGL080W	FMP37	1.06	1.47	1.59	1.98	2.15	2.27	11.14	8.53	57.87	47.26	69.01	55.80	309.06
YGL081W	YGL081w	0.97	1.41	1.60	2.04	2.18	2.29	12.62	5.25	58.52	33.98	71.14	39.24	324.26
YGL081W	YGL081w	0.86	1.08	1.27	1.62	1.81	1.95	3.11	0.97	33.14	9.59	36.25	10.56	275.98
YGL082W	YGL082w	0.99	1.52	1.68	2.06	2.22	2.35	3.20	3.06	17.21	5.64	20.40	8.70	309.95
YGL083W	SCY1	0.92	1.31	1.45	1.84	2.04	2.17	10.13	4.90	55.65	33.64	65.78	38.55	326.59
YGL084C	GUP1	0.92	1.31	1.37	1.71	1.84	1.94	17.07	5.74	63.88	36.83	80.94	42.58	339.19
YGL085W	YGL085w	0.98	1.46	1.57	1.95	2.09	2.21	24.57	12.06	74.18	53.16	98.75	65.22	352.60
YGL086W	MAD1	0.92	1.42	1.52	1.81	1.91	2.02	22.17	10.59	74.94	49.37	97.11	59.97	350.07
YGL087C	MMS2	0.93	1.49	1.61	1.97	2.11	2.25	3.74	3.15	21.89	3.92	25.63	7.07	286.35
YGL088W	YGL088w	0.88	1.00	1.10	1.42	1.75	2.00	1.14	0.74	15.85	6.50	16.99	7.24	244.05
YGL089C	MF(ALPHA)2	0.93	1.41	1.51	1.91	2.06	2.20	15.89	7.69	63.22	44.44	79.11	52.13	330.37
YGL090W	LIF1	0.95	1.39	1.54	1.94	2.11	2.23	11.82	3.63	53.13	20.57	64.95	24.20	331.84
YGL094C	PAN2	0.93	1.42	1.51	1.90	2.05	2.17	19.69	6.96	70.99	43.05	90.68	50.01	338.45
YGL095C	VPS45	0.92	1.00	1.02	0.94	0.94	0.90	122.67	128.14	143.03	116.27	265.70	244.40	374.21
YGL096W	TOS8	0.99	1.47	1.59	1.99	2.14	2.26	17.26	7.01	67.22	41.26	84.48	48.27	331.77
YGL100W	SEH1	0.81	1.01	1.13	1.64	1.93	2.10	0.15	0.85	1.29	7.22	1.44	8.07	253.01
YGL101W	YGL101w	0.94	1.29	1.51	1.95	2.14	2.22	3.40	0.74	35.43	10.14	38.83	10.88	244.90
YGL101W	YGL101w	0.90	1.13	1.16	1.43	1.70	2.07	6.60	1.55	51.79	17.74	58.38	19.29	288.00
YGL104C	VPS73	1.06	1.45	1.69	2.12	2.28	2.35	0.76	0.68	3.93	3.37	4.69	4.05	256.89
YGL104C	VPS73	0.95	1.24	1.36	1.76	1.95	2.10	5.52	2.15	45.88	21.75	51.40	23.90	290.58
YGL105W	ARC1	1.03	1.24	1.34	1.75	2.09	2.20	18.55	19.12	67.24	63.22	85.80	82.34	311.38
YGL107C	RMD9	0.97	1.12	1.11	0.95	1.02	0.94	130.38	129.46	123.45	126.10	253.83	255.56	325.69
YGL107C	RMD9	1.00	1.41	1.60	2.00	2.16	2.26	5.61	2.66	45.02	25.90	50.63	28.56	255.79
YGL108C	YGL108c	0.95	1.26	1.40	1.89	2.16	2.22	5.67	9.94	42.95	49.14	48.62	59.08	296.25
YGL109W	YGL109w	0.97	1.29	1.51	1.88	2.05	2.13	18.11	8.62	65.14	47.83	83.25	56.45	335.25
YGL110C	CUE3	0.93	1.19	1.30	1.60	1.83	1.88	20.10	4.01	67.74	37.56	87.84	41.57	295.17
YGL114W	YGL114w	0.92	1.20	1.35	1.69	1.93	2.01	7.22	0.85	49.88	13.11	57.09	13.97	308.78
YGL115W	SNF4	0.93	1.24	1.40	1.82	2.08	2.17	5.84	2.28	49.82	34.32	55.66	36.60	273.55

ORF.name	Strain	Optical density at 600 nm at regular intervals (h)						GLUCOSE		FRUCTOSE		TOTAL SUGARS (g/l)		TOTAL AMINO ACIDS (mg/L)
		0	26	33	48	59	78	102 h	118 h	102 h	118 h	102 h	118 h	102 h
YGL117W	*YGL117w*	0.91	1.20	1.35	1.73	1.96	2.07	3.10	0.77	34.50	8.56	37.60	9.33	286.46
YGL118C	*YGL118c*	0.91	1.25	1.43	1.86	2.08	2.17	2.92	0.85	33.68	11.10	36.60	11.95	284.11
YGL119W	*ABC1*	0.97	1.11	1.12	0.99	0.98	0.98	123.82	120.93	138.49	104.25	262.30	225.17	496.00
YGL121C	*GPG1*	1.01	1.35	1.58	2.02	2.19	2.27	4.38	0.94	39.73	14.68	44.11	15.62	288.09
YGL124C	*MON1*	0.96	1.27	1.43	1.79	1.97	2.02	21.72	18.04	80.73	76.16	102.45	94.20	330.21
YGL125W		0.90	1.11	1.18	1.56	1.92	2.11	0.93	0.70	17.18	4.71	18.11	5.41	294.26
YGL125W	*MET13*	0.95	1.19	1.24	1.49	1.83	2.06	15.89	2.14	70.29	28.57	86.18	30.71	322.16
YGL126W	*SCS3*	0.87	1.14	1.30	1.75	2.01	2.09	6.24	3.48	45.98	35.16	52.22	38.64	296.85
YGL127C	*SOH1*	0.96	1.18	1.23	1.45	1.74	2.00	40.91	38.06	91.21	90.59	132.12	128.65	361.14
YGL129C	*RSM23*	0.97	1.04	1.08	0.98	1.00	0.98	133.89	145.14	128.93	138.82	262.83	283.97	208.89
YGL131C	*SNT2*	0.92	1.10	1.28	1.74	1.99	2.13	18.79	10.87	71.46	54.87	90.25	65.74	316.16
YGL132W	*YGL132w*	0.93	1.16	1.38	1.90	2.16	2.33	0.80	0.79	5.12	1.83	5.92	2.62	249.84
YGL133W	*ITC1*	0.91	1.11	1.33	1.79	1.99	2.15	22.67	12.00	80.70	65.79	103.37	77.79	323.37
YGL134W	*PCL10*	0.87	1.06	1.17	1.54	1.83	2.03	21.79	6.53	76.55	37.84	98.34	44.38	341.73
YGL135W	*RPL1b*	0.97	1.32	1.61	2.04	2.21	2.33	0.83	0.61	8.18	6.67	9.01	7.27	227.45
YGL136C	*MRM2*	0.90	1.09	1.21	1.62	1.86	2.06	11.78	8.74	56.99	48.45	68.76	57.20	269.61
YGL138C	*YGL138c*	0.94	1.18	1.38	1.82	2.03	2.19	4.68	2.12	41.46	30.10	46.13	32.21	280.03
YGL139W	*FLC3*	0.90	1.11	1.30	1.79	1.97	2.10	19.26	13.51	68.17	59.54	87.44	73.05	329.30
YGL140C	*YGL140c*	0.92	1.15	1.35	2.00	1.93	2.05	19.30	8.20	68.39	46.70	87.68	54.91	329.75
YGL141W	*HUL5*	0.91	1.08	1.24	1.70	1.92	2.03	28.81	8.97	81.17	51.34	109.98	60.32	331.60
YGL143C	*MRF1*	0.91	1.00	1.01	0.95	0.95	0.91	136.80	143.42	132.90	140.43	269.70	283.85	250.21
YGL144C	*ROG1*	0.88	1.06	1.23	1.75	1.97	2.08	11.53	1.81	56.48	30.65	68.01	32.46	310.54
YGL146C	*RRT6*	0.96	1.17	1.37	1.80	2.05	2.14	18.57	7.85	70.38	51.10	88.94	58.95	323.84
YGL147C	*RPL9a*	0.94	1.09	1.23	1.67	1.96	2.12	22.82	4.30	73.38	38.31	96.20	42.61	332.46
YGL148W	*ARO2*	0.95	1.01	1.04	1.00	1.03	1.03	137.13	155.22	135.10	150.31	272.23	305.53	235.10
YGL149W	*YGL149w*	0.93	1.14	1.39	1.80	2.03	2.15	12.52	3.24	62.14	31.68	74.66	34.92	314.00
YGL151W	*NUT1*	0.92	1.06	1.21	1.75	1.99	2.12	27.64	19.22	78.90	71.60	106.54	90.82	323.68
YGL152C	*YGL152c*	0.91	1.22	1.47	1.93	2.12	2.22	15.31	15.43	60.99	60.74	76.30	76.17	301.99
YGL153W	*PEX14*	0.90	1.17	1.38	1.82	2.02	2.15	16.88	9.71	69.42	51.25	86.30	60.95	290.27
YGL154C	*LYS5*	0.91	1.15	1.34	1.77	1.96	2.11	16.11	6.93	63.97	45.12	80.08	52.05	332.51
YGL156W	*AMS1*	0.91	1.11	1.28	1.71	1.91	2.06	21.98	11.90	71.53	57.41	93.51	69.31	336.16
YGL157W	*ARI1*	0.93	1.15	1.34	1.76	1.97	2.09	19.15	6.69	66.50	44.36	85.64	51.06	338.30
YGL158W	*RCK1*	0.88	1.04	1.20	1.62	1.85	1.98	13.58	8.86	61.69	48.33	75.27	57.19	323.59
YGL159W	*YGL159w*	0.88	1.06	1.22	1.71	1.89	2.01	13.89	8.09	62.24	50.10	76.13	58.20	318.50
YGL160W	*AIM14*	0.92	1.04	1.22	1.60	1.87	2.03	24.02	1.43	78.01	22.21	102.03	23.64	331.10
YGL161C	*YIP5*	0.92	1.16	1.39	1.87	2.07	2.21	21.39	1.01	69.02	14.47	90.41	15.47	355.26
YGL162W	*SUT1*	0.95	1.15	1.35	1.76	1.96	2.10	19.34	5.10	73.13	44.84	92.47	49.94	327.61
YGL163C	*RAD54*	0.92	1.10	1.24	1.60	1.85	2.03	31.95	14.83	88.59	65.42	120.54	80.25	344.99
YGL164C	*YRB30*	0.91	1.12	1.31	1.70	1.93	2.08	12.86	9.61	59.82	52.28	72.68	61.88	308.92
YGL165C	*YGL165c*	0.92	1.14	1.34	1.64	1.78	1.89	39.23	30.44	92.10	90.31	131.33	120.75	343.22
YGL166W	*CUP2*	0.97	1.27	1.52	1.88	1.99	2.09	31.77	23.80	87.08	80.50	118.85	104.31	330.56
YGL167C	*PMR1*	0.89	0.99	1.10	1.57	1.81	1.99	19.06	9.74	68.32	53.81	87.38	63.56	314.05
YGL168W	*HUR1*	0.94	1.01	1.11	1.51	1.80	2.00	20.79	10.98	72.18	60.32	92.97	71.30	317.10
YGL170C	*SPO74*	0.94	1.13	1.30	1.74	1.93	2.06	20.04	17.08	71.21	66.24	91.24	83.33	325.18
YGL173C	*KEM1*	0.92	0.99	1.02	1.09	1.30	1.53	39.27	27.27	89.07	75.71	128.33	102.97	293.08
YGL174W	*BUD13*	0.92	1.05	1.16	1.62	1.90	2.05	11.53	10.60	58.77	54.84	70.30	65.44	300.70
YGL175C	*SAE2*	0.94	1.10	1.25	1.65	1.90	2.04	18.24	1.21	69.81	21.27	88.05	22.48	335.86
YGL176C	*YGL176c*	0.91	1.05	1.24	1.69	1.92	2.09	28.99	1.54	82.85	24.43	111.84	25.96	352.35
YGL177W	*YGL177w*	0.92	1.08	1.28	1.71	1.95	2.14	11.25	0.90	55.65	5.54	66.90	6.44	332.02
YGL178W	*MPT5*	0.95	1.17	1.31	1.70	1.99	2.19	6.88	2.27	48.21	22.59	55.09	24.86	293.14
YGL179C	*TOS3*	0.91	1.11	1.33	1.76	1.97	2.12	12.60	6.19	63.80	46.59	76.40	52.78	320.45
YGL180W	*ATG1*	0.93	1.13	1.32	1.78	2.03	2.17	16.59	15.43	66.69	61.78	83.29	77.21	302.55
YGL181W	*GTS1*	0.97	1.22	1.44	1.83	2.06	2.19	15.45	12.88	66.82	57.34	82.27	70.22	316.81
YGL184C	*STR3*	0.96	1.24	1.50	1.98	2.17	2.30	3.92	4.60	41.64	32.36	45.55	36.95	279.99
YGL185C	*YGL185c*	0.89	1.15	1.37	1.82	2.07	2.24	1.25	1.24	13.62	14.14	14.87	15.38	257.08
YGL185C	*YGL185c*	0.93	1.27	1.40	1.84	2.04	2.19	8.27	2.76	51.78	27.77	60.05	30.53	290.46
YGL186C	*TPN1*	0.95	1.28	1.48	1.85	2.00	2.15	6.12	1.50	48.43	18.16	54.55	19.67	288.95
YGL188C-A	*YGL188c-a*	0.92	1.13	1.20	1.43	1.67	1.87	12.46	4.95	68.22	36.15	80.68	41.10	323.65
YGL190C	*CDC55*	0.87	1.18	1.35	1.75	2.01	2.16	4.33	8.00	43.52	38.62	47.86	46.62	276.73
YGL191W	*COX13*	0.90	1.20	1.33	1.74	1.97	2.13	2.47	3.21	33.68	26.59	36.16	29.80	259.22
YGL192W	*IME4*	0.92	1.19	1.30	1.68	1.93	2.15	1.58	1.30	19.27	13.97	20.85	15.28	245.23
YGL194C	*HOS2*	0.98	1.16	1.26	1.70	1.88	2.06	8.87	1.74	52.90	23.62	61.76	25.36	265.69
YGL195W	*GCN1*	0.97	1.17	1.27	1.69	1.87	2.05	6.09	4.56	51.78	42.74	57.86	47.30	278.70
YGL196W	*DSD1*	1.01	1.19	1.31	1.77	1.95	2.12	12.85	8.00	62.76	49.74	75.61	57.74	306.32
YGL196W	*DSD1*	0.95	1.26	1.43	1.82	1.99	2.13	3.11	0.97	35.23	6.58	38.34	7.55	277.10
YGL197W	*MDS3*	0.95	1.05	1.09	1.79	1.80	1.90	21.82	21.37	76.68	71.37	98.50	92.74	323.11
YGL198W	*YIP4*	1.03	1.21	1.31	1.84	2.05	2.18	25.61	27.31	79.27	75.91	104.88	103.22	320.25
YGL199C	*YGL199c*	0.93	1.16	1.13	1.58	1.84	2.08	7.01	0.97	48.74	14.69	55.76	15.66	294.01
YGL199C	*YGL199c*	0.91	1.31	1.50	1.90	2.08	2.21	14.12	14.41	52.58	50.68	66.69	65.09	330.79
YGL200C	*EMP24*	0.97	1.16	1.16	1.51	1.72	1.93	51.18	41.35	100.18	92.40	151.36	133.74	362.99
YGL202W	*ARO8*	0.94	1.18	1.23	1.72	1.92	2.11	29.15	15.82	83.84	72.19	112.99	88.00	338.31
YGL202W	*ARO8*	0.96	1.29	1.46	1.86	2.03	2.18	3.38	0.98	35.81	7.32	39.19	8.30	278.39
YGL203C	*KEX1*	0.95	1.34	1.45	1.93	2.07	2.21	7.58	1.60	50.63	21.55	58.21	23.15	302.36
YGL205W	*POX1*	0.93	1.14	1.25	1.74	1.93	2.11	15.13	9.13	68.83	55.57	83.96	64.70	310.04
YGL206C	*CHC1*	0.90	1.00	1.02	0.93	1.00	1.17	54.09	30.54	122.22	80.43	176.31	110.97	369.29
YGL208W	*SIP2*	1.02	1.36	1.47	1.89	2.06	2.21	9.85	4.94	55.91	43.40	65.76	48.34	302.62
YGL209W	*MIG2*	0.98	1.38	1.56	2.03	2.20	2.35	0.89	0.51	7.95	9.97	8.84	10.49	269.67
YGL210W	*YPT32*	0.89	1.16	1.27	1.67	1.87	2.05	1.00	1.69	22.60	21.75	23.60	23.44	289.82
YGL211W	*NCS6*	0.91	1.15	1.26	1.76	2.02	2.24	1.21	2.20	19.93	29.50	21.14	31.70	276.52
YGL211W	*NCS6*	0.98	1.32	1.49	1.89	2.05	2.19	4.47	1.28	38.55	12.49	43.02	13.78	260.94
YGL212W	*VAM7*	0.89	1.10	1.17	1.45	1.60	1.83	0.72	1.01	28.88	9.23	29.60	10.24	297.73
YGL213C	*SKI8*	1.01	1.26	1.36	1.87	2.08	2.24	24.73	10.36	74.73	53.08	99.46	63.44	317.67
YGL214W	*YGL214w*	1.07	1.33	1.44	1.91	2.11	2.29	20.88	22.42	80.12	76.45	108.10	98.88	321.43
YGL214W	*YGL214w*	0.93	1.29	1.48	1.89	2.07	2.20	12.82	8.24	49.89	39.08	62.71	47.32	308.25
YGL215W	*CLG1*	1.03	1.26	1.37	1.85	2.05	2.20	15.39	6.22	64.23	46.22	79.62	52.44	314.48
YGL216W	*KIP3*	0.99	1.20	1.31	1.87	2.08	2.27	14.39	6.90	64.89	47.24	79.28	54.14	288.72
YGL216W	*KIP3*	0.94	1.22	1.33	1.74	1.95	2.10	5.16	9.54	46.32	43.36	51.48	52.90	269.07
YGL217C	*YGL217c*	0.94	1.13	1.20	1.67	1.87	2.08	18.17	15.78	70.69	64.56	88.86	80.33	320.63
YGL217C	*YGL217c*	0.89	1.23	1.36	1.68	1.85	1.99	15.32	16.09	57.39	54.58	72.71	70.67	326.64
YGL218W	*YGL218w*	0.86	1.04	1.23	1.62	1.85	1.99	1.90	0.97	24.68	9.63	26.58	10.60	275.52
YGL218W	*YGL218w*	1.00	1.34	1.48	1.87	2.01	2.16	9.87	4.10	53.11	36.91	62.98	41.01	302.95
YGL219C	*MDM34*	1.01	1.24	1.49	1.96	2.15	2.31	9.91	1.07	55.42	16.80	65.33	17.87	319.21
YGL220W	*FRA2*	0.99	1.07	1.01	1.00	1.00	0.98	135.48	139.42	133.42	132.20	268.91	271.62	519.48
YGL221C	*NIF3*	1.09	1.47	1.64	2.01	2.16	2.31	11.21	9.59	56.95	50.04	68.16	59.63	318.41
YGL222C	*EDC1*	1.08	1.41	1.57	2.05	2.20	2.34	34.61	21.63	96.10	73.94	130.72	95.57	345.96
YGL223C	*COG1*	0.90	1.04	1.13	1.48	1.75	1.92	15.92	4.08	75.44	34.49	91.36	38.57	316.39
YGL224C	*SDT1*	0.97	1.32	1.55	1.98	2.16	2.31	1.46	1.60	19.07	16.51	20.52	18.11	286.17
YGL224C	*SDT1*	0.93	1.24	1.41	1.84	2.03	2.18	3.13	1.51	33.81	16.73	36.94	18.24	274.10
YGL226C-A	*OST5*	0.95	1.25	1.42	1.87	2.05	2.20	14.50	4.44	61.16	40.31	75.66	44.75	324.38
YGL226W	*MTC3*	0.99	1.27	1.46	1.90	2.09	2.26	5.21	1.40	44.18	20.03	49.38	21.43	295.74
YGL227W	*VID30*	1.03	1.29	1.51	1.98	2.13	2.28	16.69	5.14	66.51	40.84	83.20	45.98	331.35
YGL228W	*SHE10*	0.98	1.19	1.29	1.75	1.95	2.13	6.55	2.56	52.91	31.31	59.46	33.87	305.47
YGL229C	*SAP4*	1.02	1.33	1.50	1.97	2.15	2.30	2.60	2.04	29.27	21.24	31.87	23.28	299.54
YGL230C	*YGL230c*	1.02	1.35	1.54	1.98	2.15	2.30	1.92	1.52	27.28	20.92	29.20	22.44	254.69
YGL231C	*EMC4*	1.02	1.41	1.59	2.01	2.16	2.29	3.79	2.06	37.53	25.88	41.32	27.93	290.76
YGL232W	*TAN1*	1.12	1.50	1.67	2.11	2.26	2.40	1.89	1.37	25.67	16.67	27.56	18.03	305.66
YGL234W	*ADE5,7*	1.03	1.29	1.33	1.31	1.44	1.52	105.68	100.42	128.69	122.11	234.37	222.53	496.90
YGL235W	*YGL235w*	1.12	1.48	1.59	2.00	2.16	2.30	29.27	11.07	87.64	56.10	116.91	67.17	345.50
YGL235W	*YGL235w*	0.95	1.37	1.57	1.93	2.08	2.18	8.70	7.49	43.75	36.04	52.44	43.53	308.63
YGL236C	*MTO1*	1.00	1.36	1.55	2.00	2.16	2.30	7.10	2.11	53.69	23.19	60.78	25.29	313.19
YGL237C	*HAP2*	1.04	1.50	1.77	2.19	2.31	2.42	8.26	3.73	52.22	35.92	60.48	39.65	301.05
YGL237C	*HAP2*	0.93	1.05	1.08	1.05	1.28	1.49	17.11	5.02	71.72	34.80	88.83	39.81	272.28
YGL240W	*DOC1*	0.94	1.00	1.02	0.92	0.92	0.89	125.69	124.11	147.62	111.79	273.31	235.91	389.39
YGL241W	*KAP114*	1.17	1.48	1.60	2.04	2.19	2.31	22.28	13.16	75.16	60.87	97.44	74.03	338.66
YGL242C	*YGL242c*	1.05	1.38	1.53	1.97	2.15	2.31	18.06	6.96	75.30	52.48	93.36	59.44	331.40
YGL243W	*TAD1*	1.15	1.41	1.51	1.94	2.12	2.27	22.62	8.71	78.72	51.29	101.34	60.00	310.63
YGL244W	*RTF1*	0.94	1.14	1.22	1.65	1.87	2.07	8.54	5.67	61.14	53.33	69.68	58.99	275.42
YGL246C	*RAI1*	0.97	1.16	1.14	1.52	1.81	2.05	11.09	8.86	64.66	66.40	75.75	75.25	309.77
YGL248W	*PDE1*	1.00	1.34	1.47	1.99	2.19	2.35	1.15	1.00	4.85	1.20	5.99	2.19	271.71
YGL249W	*ZIP2*	0.96	1.23	1.33	1.80	1.98	2.17	16.42	5.24	70.92	44.72	87.35	49.96	332.72
YGL250W	*RMR1*	1.02	1.22	1.29	1.76	1.96	2.16	14.43	6.21	67.19	47.26	81.62	53.47	316.27
YGL251C	*HFM1*	1.06	1.44	1.61	2.02	2.17	2.30	3.07	1.95	35.14	21.87	38.22	23.82	289.00
YGL252C		1.07	1.51	1.70	2.11	2.23	2.34	14.38	5.98	69.90	44.91	84.28	50.89	341.55
YGL252C	*RTG2*	0.87	1.12	1.27	1.68	1.90	2.00	2.86	1.69	33.51	16.33	36.37	18.02	282.53
YGL252C	*RTG2*	0.91	1.14	1.21	1.60	1.89	2.09	16.51	3.08	67.44	32.02	83.95	35.10	330.31
YGL252C	*RTG2*	0.87	1.13	1.18	1.54	1.82	1.92	11.55	4.25	56.79	34.79	68.34	39.04	318.03
YGL253W	*HXK2*	0.92	1.18	1.35	1.79	1.96	2.13	29.18	12.88	86.97	61.64	116.15	74.53	349.71
YGL254W	*FZF1*	0.92	1.14	1.27	1.70	1.88	2.07	23.07	11.33	77.24	62.85	100.31	74.18	339.16
YGL255W	*ZRT1*	0.96	1.29	1.51	1.96	2.12	2.28	2.09	1.68	26.57	19.63	28.66	21.30	279.93
YGL256W	*ADH4*	0.97	1.17	1.24	1.71	1.93	2.17	25.63	13.97	78.67	62.62	104.29	76.59	334.00
YGL257C	*MNT2*	1.10	1.30	1.36	1.79	2.03	2.19	36.20	21.83	89.05	75.76	125.25	97.59	352.25
YGL258W	*VEL1*	1.07	1.36	1.52	2.01	2.17	2.30	4.15	2.76	37.84	26.61	41.99	29.37	269.88
YGL259W	*YPS5*	1.01	1.29	1.45	1.95	2.13	2.29	2.08	1.11	28.07	12.73	30.15	13.84	266.95
YGL260W	*YGL260w*	0.99	1.31	1.47	1.90	2.08	2.26	1.24	1.08	16.84	9.30	18.08	10.37	294.49

ORF.name	Strain	Optical density at 600 nm at regular intervals (h)						GLUCOSE		FRUCTOSE		TOTAL SUGARS (g/l)		TOTAL AMINO ACIDS (mg/L)
		0	26	33	48	59	78	102 h	118 h	102 h	118 h	102 h	118 h	102 h
YGL261C	PAU11	0.96	1.25	1.38	1.79	1.97	2.14	12.19	4.59	60.35	40.01	72.54	44.60	315.26
YGL262W	YGL262w	1.05	1.34	1.52	1.96	2.12	2.28	8.78	3.84	53.83	39.58	62.61	43.42	305.11
YGL263W	COS12	1.10	1.48	1.69	2.00	2.15	2.31	1.49	1.10	19.35	12.53	20.84	13.63	283.30
YGR001C	YGR001c	1.15	1.52	1.71	2.12	2.24	2.35	15.34	6.04	73.64	44.74	88.98	50.78	322.76
YGR003W	CUL3	1.10	1.54	1.75	2.12	2.24	2.35	11.85	4.72	62.12	38.30	73.97	43.02	316.09
YGR004W	PEX31	1.07	1.41	1.64	2.07	2.22	2.34	10.01	2.43	55.45	27.90	65.46	30.33	279.48
YGR006W	PRP18	0.93	1.09	1.08	1.01	1.13	1.28	102.46	94.25	128.36	121.50	230.82	215.75	476.41
YGR007W	MUQ1	1.09	1.47	1.58	2.08	2.27	2.42	6.91	2.98	50.05	35.05	56.96	38.03	282.24
YGR008C	STF2	1.03	1.18	1.23	1.65	1.89	2.12	28.07	16.80	82.13	68.32	110.20	85.12	326.80
YGR010W	NMA2	1.06	1.32	1.40	1.90	2.10	2.22	11.37	3.03	67.85	34.42	79.22	37.45	307.75
YGR011W	YGR011w	1.05	1.32	1.44	1.89	2.09	2.26	1.20	0.97	10.00	3.68	11.20	4.65	284.53
YGR011W	YGR011w	0.94	1.33	1.49	1.79	1.95	2.05	15.01	11.22	53.67	45.10	68.68	56.32	362.30
YGR012W	YGR012w	1.01	1.24	1.36	1.82	2.04	2.25	1.27	0.97	13.62	4.50	14.89	5.47	280.07
YGR014W	MSB2	0.98	1.24	1.32	1.68	1.85	2.05	8.26	2.22	55.06	28.85	63.33	31.07	310.42
YGR015C	YGR015c	1.10	1.40	1.58	2.07	2.22	2.37	6.04	2.07	50.17	26.41	56.20	28.48	284.71
YGR016W	YGR016w	1.15	1.41	1.54	1.94	2.14	2.32	2.00	1.42	27.21	19.33	29.21	20.75	295.37
YGR017W	YGR017w	1.05	1.36	1.52	1.94	2.10	2.27	4.88	4.04	41.38	37.27	46.26	41.31	285.89
YGR018C	YGR018c	1.04	1.31	1.47	1.81	1.97	2.16	15.68	7.24	67.65	51.01	83.33	58.26	285.29
YGR018C	YGR018c	1.04	1.58	1.79	2.13	2.27	2.34	3.32	3.30	17.79	13.93	21.10	17.23	296.54
YGR019W	UGA1	0.97	1.16	1.24	1.68	1.88	2.10	12.56	3.38	64.21	37.94	76.77	41.32	298.41
YGR020C	VMA7	1.11	1.35	1.31	1.54	1.76	2.01	60.53	44.06	115.38	100.89	175.91	144.95	341.38
YGR020C	VMA7	0.86	1.17	1.17	1.15	1.45	1.71	50.87	25.10	112.36	87.00	163.23	112.10	337.03
YGR021W	YGR021w	1.05	1.41	1.53	2.00	2.21	2.38	19.48	7.00	71.76	51.26	91.23	58.25	328.01
YGR022C	YGR022c	1.05	1.23	1.28	1.66	1.87	2.07	29.52	21.94	87.01	84.07	116.54	106.01	335.83
YGR022C	YGR022c	0.94	1.37	1.55	1.90	2.06	2.17	5.31	3.81	31.83	21.94	37.13	25.75	296.57
YGR023W	MTL1	1.05	1.31	1.45	1.90	2.10	2.24	10.05	1.83	51.83	24.57	61.88	26.40	314.83
YGR025W	YGR025w	1.00	1.25	1.40	1.88	2.05	2.22	5.66	2.20	47.41	30.30	53.06	32.50	295.69
YGR025W	YGR025w	0.94	1.37	1.55	1.91	2.05	2.18	8.96	4.58	45.23	28.91	54.20	33.49	307.20
YGR026W	YGR026w	1.03	1.41	1.65	2.10	2.26	2.41	0.99	0.88	11.14	6.25	12.13	7.13	282.83
YGR027C	RPS25a	1.01	1.31	1.45	1.92	2.12	2.20	8.26	1.91	58.07	29.57	66.32	31.48	339.26
YGR028W	MSP1	0.91	1.08	1.29	1.72	1.93	2.11	7.50	1.99	50.06	27.18	57.56	29.17	283.50
YGR031W	YGR031w	0.98	1.36	1.59	2.06	2.21	2.29	0.96	0.87	17.31	4.67	18.27	5.54	273.10
YGR032W	GSC2	1.00	1.30	1.57	1.99	2.15	2.28	11.17	2.32	56.71	28.93	67.88	31.24	322.23
YGR033C	TIM21	1.00	1.41	1.63	2.08	2.24	2.31	0.80	0.92	12.65	4.24	13.44	5.16	277.63
YGR034W	RPL26b	0.94	1.22	1.35	1.79	2.04	2.20	0.57	0.88	0.61	0.22	1.18	1.10	260.61
YGR035C	YGR035c	0.93	1.21	1.41	1.89	2.09	2.17	1.05	0.97	19.66	8.44	20.71	9.40	279.20
YGR035W-A	YGR035w-a	0.96	1.20	1.38	1.76	1.97	2.09	8.14	0.42	52.66	14.65	60.79	15.07	300.80
YGR036C	CAX4	0.96	1.07	1.06	1.24	1.55	1.80	16.89	4.75	71.58	42.70	88.47	47.44	296.88
YGR037C	ACB1	1.02	1.30	1.56	2.10	2.29	2.37	0.38	0.66	9.07	5.43	9.45	6.10	264.46
YGR037C	ACB1	0.86	1.05	1.08	1.14	1.35	1.48	39.06	24.14	86.12	57.47	125.18	81.61	307.95
YGR038W	ORM1	0.94	1.15	1.36	1.84	2.03	2.18	11.05	1.80	57.78	26.45	68.82	28.25	320.51
YGR039W	YGR039w	0.96	1.25	1.44	1.91	2.09	2.18	13.62	6.83	63.67	48.80	77.29	55.63	342.44
YGR040W	KSS1	0.92	1.16	1.41	1.84	2.02	2.17	4.85	3.36	43.01	35.05	47.86	38.41	306.46
YGR041W	BUD9	0.99	1.35	1.58	2.04	2.21	2.29	7.96	2.65	51.19	30.01	59.14	32.66	320.63
YGR042W	YGR042w	0.99	1.39	1.62	2.07	2.22	2.30	5.93	3.35	47.08	34.72	53.01	38.08	323.75
YGR043C	NQM1	0.98	1.28	1.44	1.91	2.12	2.22	3.37	1.17	38.17	18.97	41.54	20.13	316.74
YGR044C	RME1	0.94	1.26	1.45	1.87	2.05	2.14	2.02	0.81	29.02	4.29	31.04	5.10	313.47
YGR045C	YGR045c	1.06	1.44	1.67	2.16	2.32	2.39	1.74	1.00	27.30	9.23	29.04	10.22	308.56
YGR049W	SCM4	0.99	1.37	1.61	2.08	2.23	2.29	1.21	1.03	17.56	7.93	18.77	8.96	285.90
YGR050C	YGR050c	0.90	1.06	1.26	1.70	1.92	2.12	1.08	0.83	14.44	7.41	15.52	8.25	270.41
YGR051C	YGR051c	1.02	1.43	1.63	2.02	2.22	2.32	2.30	0.70	6.54	0.25	8.84	0.95	263.35
YGR052W	FMP48	0.99	1.33	1.53	1.99	2.19	2.28	1.11	1.10	8.01	4.01	9.11	5.11	269.95
YGR053C	YGR053c	0.91	1.07	1.27	1.73	1.95	2.13	4.64	1.50	42.09	21.58	46.73	23.08	303.63
YGR054W	YGR054w	0.93	1.16	1.31	1.73	1.96	2.04	1.63	0.94	26.91	14.60	28.54	15.54	300.60
YGR055W	MUP1	0.98	1.15	1.31	1.87	2.09	2.18	3.64	1.58	37.30	21.95	40.94	23.54	292.34
YGR056W	RSC1	1.02	1.22	1.32	1.78	2.00	2.13	21.17	8.93	75.56	53.56	96.74	62.48	330.47
YGR057C	LST7	1.06	1.51	1.72	2.13	2.30	2.41	2.85	1.30	30.80	11.04	33.65	12.34	333.36
YGR058W	PEF1	1.01	1.41	1.62	2.05	2.22	2.30	4.09	1.21	42.31	16.17	46.40	17.38	319.54
YGR059W	SPR3	0.99	1.33	1.49	1.89	2.06	2.13	2.38	1.11	33.37	8.15	35.75	9.26	313.55
YGR061C	ADE6	0.85	1.12	1.12	1.06	1.15	1.14	109.85	105.65	124.77	119.13	234.62	224.78	500.28
YGR062C	COX18	1.10	1.22	1.23	1.50	1.80	1.97	27.60	11.29	86.93	64.99	114.52	76.28	332.81
YGR062C	COX18	0.89	1.06	1.08	0.93	0.92	0.94	123.61	116.33	130.91	96.69	254.52	213.02	507.04
YGR062C	COX18	0.89	1.20	1.24	1.41	1.67	1.85	12.94	6.65	59.00	43.41	71.95	50.06	292.69
YGR063C	SPT4	0.93	0.96	1.00	1.23	1.47	1.74	48.31	38.62	96.25	91.32	144.56	129.95	367.02
YGR064W	YGR064w	1.05	1.29	1.41	1.87	2.07	2.15	43.44	35.16	98.47	90.06	141.91	125.22	435.91
YGR066C	YGR066c	1.00	1.40	1.60	2.03	2.21	2.29	0.77	0.74	5.98	2.46	6.75	3.20	257.26
YGR067C	YGR067c	1.11	1.52	1.71	2.10	2.25	2.34	1.58	0.98	27.99	14.69	29.57	15.67	296.97
YGR068C	ART5	1.06	1.47	1.69	2.10	2.26	2.33	1.17	0.97	23.74	10.72	24.91	11.69	282.97
YGR069W	YGR069w	1.06	1.53	1.79	2.19	2.33	2.38	0.88	0.83	20.20	10.94	21.08	11.76	238.14
YGR070W	ROM1	1.11	1.47	1.71	2.21	2.51	2.50	0.88	0.63	22.13	10.63	23.00	11.26	270.15
YGR071C	YGR071c	0.98	1.32	1.53	2.01	2.19	2.28	2.32	0.56	30.64	4.95	32.97	5.51	288.18
YGR072W	UPF3	0.96	1.26	1.45	1.93	2.12	2.20	4.97	1.28	40.97	15.58	45.94	16.85	294.35
YGR076C	MRPL25	0.94	1.07	1.09	1.46	1.67	1.78	15.85	5.85	65.97	45.91	81.82	51.76	295.90
YGR077C	PEX8	0.96	1.27	1.47	2.01	2.20	2.28	1.37	1.09	21.19	3.98	22.56	5.08	292.21
YGR078C	PAC10	0.96	1.24	1.37	1.80	2.00	2.11	11.20	1.91	61.33	27.25	72.53	29.17	318.64
YGR079W	YGR079w	1.02	1.36	1.56	2.06	2.25	2.33	1.03	1.04	4.69	0.69	5.71	1.73	270.13
YGR080W	TWF1	0.95	1.31	1.51	1.94	2.11	2.18	2.54	1.17	32.64	11.68	35.18	12.86	295.77
YGR081C	SLX9	0.99	1.19	1.26	1.67	1.92	2.06	18.52	9.21	76.93	57.36	95.45	66.58	321.71
YGR084C	MRP13	1.03	1.41	1.61	2.02	2.20	2.28	1.15	1.17	12.42	5.89	13.57	7.06	265.67
YGR085C	RPL11b	1.03	1.31	1.47	1.96	2.18	2.29	1.09	1.04	18.69	9.21	19.78	10.25	275.50
YGR086C	PIL1	0.92	1.26	1.48	1.89	2.09	2.26	1.21	1.12	2.07	0.50	3.28	1.62	250.67
YGR086C	PIL1	0.91	1.06	1.26	1.72	1.91	2.04	5.28	3.13	42.87	32.27	48.15	35.40	308.34
YGR087C	POC6	0.98	1.34	1.56	2.05	2.25	2.35	0.91	0.85	0.88	0.38	1.79	1.23	266.26
YGR088W	CTT1	0.98	1.20	1.41	1.94	2.14	2.22	1.84	1.05	25.46	9.01	27.30	10.06	287.30
YGR089W	NNF2	0.95	1.19	1.44	1.95	2.14	2.30	3.25	0.85	20.58	9.42	23.83	10.26	287.06
YGR092W	DBF2	0.90	0.99	1.10	1.48	1.63	1.68	75.99	75.51	111.22	118.74	187.21	194.25	328.37
YGR093W	YGR093w	0.95	1.09	1.28	1.73	1.95	2.12	8.79	3.35	52.76	35.83	61.55	39.17	311.52
YGR096W	TPC1	0.98	1.28	1.50	1.99	2.17	2.25	10.85	1.37	56.54	16.35	67.39	17.72	334.37
YGR097W	ASK10	0.97	1.28	1.47	1.94	2.11	2.20	5.51	1.33	45.43	18.12	50.94	19.45	310.86
YGR100W	MDR1	0.95	1.24	1.38	1.82	2.00	2.08	6.59	1.95	51.24	25.75	57.83	27.70	325.53
YGR101W	PCP1	1.05	1.17	1.16	1.46	1.79	1.94	20.29	6.49	76.67	51.16	96.96	57.64	291.99
YGR102C	YGR102c	0.95	1.06	1.03	1.08	1.11	1.03	128.37	123.64	131.77	127.59	260.14	251.23	559.22
YGR104C	SRB5	1.10	1.27	1.29	1.60	1.82	1.98	55.45	33.87	112.42	97.74	167.87	131.61	449.21
YGR105W	VMA21	0.99	1.17	1.20	1.61	1.86	1.99	20.79	5.70	83.26	57.15	104.05	62.85	333.52
YGR106C	VOA1	1.08	1.41	1.70	2.12	2.27	2.38	8.74	1.97	51.97	25.09	60.70	27.06	309.91
YGR107W	YGR107w	1.08	1.53	1.73	2.08	2.26	2.34	1.01	0.97	7.13	2.69	8.14	3.66	268.04
YGR108W	CLB1	0.97	1.28	1.50	1.95	2.15	2.21	1.28	0.85	16.84	7.27	18.12	8.12	275.34
YGR109C	CLB6	1.04	1.40	1.64	2.09	2.25	2.33	1.56	1.14	23.71	10.45	25.27	11.58	285.77
YGR110W	CLD1	0.95	1.17	1.40	1.83	2.01	2.17	12.43	2.47	58.54	30.34	70.97	32.81	328.22
YGR111W	YGR111w	1.01	1.28	1.47	2.02	2.21	2.30	2.53	1.13	32.48	10.75	35.01	11.88	280.08
YGR112W	SHY1	1.02	1.10	1.08	1.11	1.15	1.08	125.16	120.79	128.77	126.67	253.93	247.46	558.62
YGR117C	YGR117c	0.94	1.15	1.37	1.82	2.01	2.16	4.63	0.89	42.78	12.76	47.41	13.65	309.95
YGR118W	RPS23a	1.02	1.29	1.46	2.03	2.24	2.33	2.17	1.20	32.24	2.75	34.41	3.95	310.70
YGR121C	MEP1	0.98	1.25	1.42	1.91	2.10	2.17	11.07	1.32	59.14	15.98	70.21	17.30	340.45
YGR121W-A	YGR121w-a	0.89	1.21	1.38	1.84	1.89	1.99	13.48	1.58	65.55	18.95	79.03	20.53	320.65
YGR122C-A	YGR122c-a	0.95	1.20	1.41	1.85	2.06	2.18	2.15	0.77	28.91	9.84	31.06	10.61	289.95
YGR122W	YGR122w	1.02	1.35	1.57	2.05	2.23	2.29	8.30	1.88	55.90	25.79	64.20	27.66	323.02
YGR123C	PPT1	0.90	1.14	1.33	1.86	2.05	2.15	9.93	0.20	53.83	9.69	63.76	9.89	310.83
YGR124W	ASN2	1.00	1.26	1.48	1.98	2.17	2.30	2.37	-0.06	36.75	4.61	39.12	4.55	305.38
YGR125W	YGR125w	1.05	1.37	1.54	1.98	2.15	2.27	22.59	1.29	68.96	27.13	91.55	28.43	347.12
YGR126W	YGR126w	0.99	1.29	1.51	1.97	2.12	2.24	21.24	0.57	67.96	12.58	89.20	13.14	348.95
YGR127W	YGR127w	0.99	1.28	1.45	1.93	2.10	2.19	18.24	0.21	64.53	12.18	82.78	12.39	344.87
YGR129W	SYF2	1.03	1.33	1.50	1.94	2.11	2.25	16.03	0.20	61.19	13.29	77.22	13.49	334.49
YGR130C	YGR130c	1.00	1.32	1.52	1.95	2.10	2.22	17.62	0.22	65.61	14.42	83.24	14.64	331.63
YGR131W	YGR131w	1.03	1.37	1.60	2.07	2.24	2.34	9.04	-0.06	56.17	3.89	65.21	3.83	310.85
YGR132C	PHB1	0.92	1.18	1.35	1.84	2.02	2.15	10.74	0.01	55.58	5.60	66.32	5.61	314.11
YGR133W	PEX4	0.97	1.26	1.47	1.93	2.09	2.21	9.37	0.13	55.88	12.41	65.25	12.54	289.79
YGR134W	CAF130	0.98	1.44	1.59	2.01	2.18	2.31	15.88	4.29	55.56	27.42	71.44	31.72	321.47
YGR135W	PRE9	0.94	1.21	1.40	1.91	2.08	2.21	15.75	0.33	63.74	16.79	79.50	17.12	320.19
YGR136W	LSB1	0.95	1.24	1.44	1.91	2.08	2.19	7.23	0.04	48.17	4.39	55.40	4.43	301.69
YGR137W	YGR137w	0.94	1.24	1.47	1.96	2.13	2.25	9.02	0.17	52.79	5.84	61.81	6.01	310.90
YGR138C	TPO2	0.98	1.20	1.39	1.96	2.14	2.26	13.53	0.96	60.52	24.84	74.05	25.80	317.07
YGR139W	YGR139w	1.03	1.33	1.56	2.04	2.19	2.30	21.81	0.65	67.41	21.70	89.22	22.35	358.46
YGR141W	VPS62	0.98	1.25	1.42	1.90	2.08	2.21	19.61	0.01	68.12	12.20	87.74	12.20	345.35
YGR142W	BTN2	1.03	1.38	1.58	1.98	2.12	2.25	17.33	-0.01	62.72	8.53	80.06	8.53	344.33
YGR143W	SKN1	0.99	1.33	1.53	1.95	2.08	2.20	11.51	0.01	57.04	10.36	68.55	10.37	325.16
YGR144W	THI4	1.01	1.35	1.60	2.09	2.23	2.34	4.78	-0.09	42.83	2.69	47.61	2.60	302.11
YGR146C	ECL1	0.97	1.23	1.40	1.88	2.06	2.19	4.39	-0.12	42.36	5.20	46.75	5.09	285.22
YGR146C-A	YGR146c-a	0.95	1.23	1.34	1.73	1.93	2.06	13.47	2.62	64.02	25.16	77.49	27.78	298.97
YGR148C	RPL24b	0.97	1.21	1.37	1.88	2.06	2.20	22.00	-0.09	65.43	7.94	87.43	7.85	346.56
YGR149W	YGR149w	0.93	1.20	1.37	1.85	2.02	2.14	12.16	-0.09	57.98	7.73	70.14	7.64	316.78
YGR150C	CCM1	0.92	1.10	1.09	0.97	0.97	0.95	127.02	129.80	139.63	132.41	266.65	262.20	522.91
YGR151C	YGR151c	0.95	1.25	1.48	1.97	2.13	2.25	21.49	-0.07	67.39	7.18	88.89	7.11	345.44
YGR152C	RSR1	1.01	1.28	1.52	2.06	2.22	2.33	18.07	0.74	63.47	22.28	81.54	23.02	344.43

ORF.name	Strain	Optical density at 600 nm at regular intervals (h)						GLUCOSE		FRUCTOSE		TOTAL SUGARS (g/l)		TOTAL AMINO ACIDS (mg/L)
		0	26	33	48	59	78	102 h	118 h	102 h	118 h	102 h	118 h	102 h
YGR153W	YGR153w	1.03	1.44	1.74	2.18	2.30	2.41	0.05	0.07	5.96	-0.15	6.02	-0.09	261.85
YGR154C	GTO1	1.04	1.47	1.72	2.14	2.26	2.38	1.36	0.21	27.92	9.47	29.29	9.68	282.90
YGR155W	CYS4	0.86	1.08	1.04	0.90	0.93	0.86	120.27	121.11	124.32	120.05	244.59	241.16	535.24
YGR157W	CHO2	0.97	1.36	1.63	2.09	2.23	2.35	0.16	0.14	6.81	-0.99	6.97	-0.85	233.10
YGR159C	NSR1	1.00	1.19	1.27	1.82	2.12	2.31	22.42	5.20	74.19	45.22	96.62	50.42	323.19
YGR160W	YGR160w	0.96	1.17	1.27	1.78	2.06	2.27	21.38	1.03	71.61	25.81	92.98	26.84	334.07
YGR161C	RTS3	0.89	0.98	0.97	1.25	1.74	2.08	0.37	5.28	17.32	43.68	17.69	48.96	280.86
YGR161W-C	YGR161w-c	0.87	1.19	1.36	1.67	1.88	2.03	1.60	0.81	18.88	2.51	20.48	3.32	258.44
YGR162W	TIF4631	0.87	1.21	1.32	1.71	1.93	2.10	3.24	0.70	36.12	6.46	39.36	7.16	288.98
YGR163W	GTR2	1.02	1.44	1.72	2.19	2.32	2.41	1.95	0.09	27.64	9.32	29.59	9.41	284.22
YGR164W	YGR164w	0.97	1.32	1.54	2.00	2.16	2.29	4.65	-0.19	42.68	3.76	47.33	3.57	301.09
YGR165W	MRPS35	0.93	1.12	1.10	1.01	1.15	1.41	98.99	88.85	134.59	125.81	233.57	214.66	389.34
YGR166W	KRE11	0.96	1.23	1.41	1.89	2.06	2.19	5.54	0.23	43.56	2.42	49.10	2.65	300.75
YGR167W	CLC1	0.85	1.10	1.09	0.98	1.15	1.30	25.31	8.67	80.09	52.97	105.40	61.64	311.48
YGR168C	YGR168c	0.94	1.36	1.42	1.78	2.03	2.17	16.38	5.24	66.28	38.43	82.66	43.67	322.58
YGR169C	PUS6	1.03	1.44	1.69	2.08	2.23	2.35	1.42	0.35	27.38	10.72	28.79	11.07	286.54
YGR169C-A	YGR169c-a	0.91	1.12	1.21	1.61	1.80	1.97	16.83	8.37	70.29	42.18	87.12	50.55	345.16
YGR170W	PSD2	1.03	1.36	1.56	2.03	2.20	2.33	0.36	0.84	14.57	15.38	14.93	16.22	279.61
YGR171C	MSM1	0.94	1.10	1.07	0.94	0.95	0.92	122.98	123.29	131.80	131.82	254.79	255.11	531.35
YGR173W	RBG2	1.05	1.52	1.75	2.21	2.34	2.45	0.05	0.05	5.20	-0.14	5.26	-0.08	265.06
YGR174C	CBP4	1.01	1.39	1.67	2.19	2.33	2.43	0.43	0.37	15.53	11.82	15.96	12.19	264.55
YGR174W-A	YGR174w-a	0.94	1.37	1.58	1.98	2.13	2.24	10.82	1.79	57.89	20.03	68.71	21.81	307.98
YGR176W	YGR176w	0.91	1.23	1.44	1.98	2.16	2.27	0.13	0.09	9.90	-0.02	10.03	0.08	281.25
YGR177C	ATF2	0.96	1.31	1.52	2.06	2.26	2.37	0.11	-0.05	0.97	-0.87	1.08	-0.92	263.81
YGR178C	PBP1	0.98	1.35	1.62	2.12	2.28	2.38	4.66	-0.02	39.77	3.36	44.44	3.34	299.53
YGR180C	RNR4	0.90	1.15	1.22	1.51	1.77	1.96	19.82	10.73	71.38	53.16	91.20	63.89	320.16
YGR180C	RNR4	0.96	1.08	1.05	0.92	0.92	0.90	127.50	124.35	135.64	130.94	263.14	255.29	535.39
YGR180C	RNR4	0.88	1.16	1.14	0.99	0.99	0.96	115.96	90.90	121.52	109.54	237.48	200.44	480.98
YGR181W	TIM13	1.00	1.29	1.46	1.93	2.11	2.24	19.07	0.93	65.30	23.15	84.36	24.08	341.52
YGR182C	YGR182c	0.99	1.27	1.44	1.99	2.20	2.31	2.09	0.74	28.87	6.10	30.96	6.83	277.32
YGR183C	QCR9	0.92	1.08	1.07	0.93	0.94	0.90	117.36	106.80	134.45	122.88	251.81	229.68	499.93
YGR184C	UBR1	1.01	1.36	1.56	1.98	2.15	2.28	0.58	0.13	15.45	4.73	16.04	4.86	273.47
YGR187C	HGH1	1.03	1.43	1.66	2.10	2.26	2.37	0.21	-0.01	5.55	0.03	5.76	0.02	218.98
YGR188C	BUB1	0.91	1.33	1.44	1.74	1.87	1.97	32.52	21.20	82.37	68.60	114.89	89.80	343.46
YGR189C	CRH1	0.96	1.28	1.49	1.97	2.14	2.27	2.17	2.07	36.49	29.35	38.66	31.42	293.06
YGR192C	TDH3	0.94	1.24	1.45	1.94	2.10	2.25	1.14	0.09	25.99	6.86	27.13	6.95	296.91
YGR193C	PDX1	1.01	1.33	1.55	2.01	2.17	2.30	1.46	2.24	27.47	30.18	28.93	32.42	256.15
YGR194C	XKS1	0.96	1.25	1.43	1.88	2.06	2.20	0.11	0.00	10.65	0.65	10.76	0.65	281.13
YGR196C	FYV8	0.93	1.19	1.33	1.84	2.06	2.17	6.76	0.19	50.45	12.78	57.21	12.96	301.57
YGR197C	SNG1	0.99	1.38	1.62	2.13	2.30	2.39	0.76	0.03	18.66	0.71	19.42	0.74	287.85
YGR199W	PMT6	1.01	1.46	1.69	2.12	2.25	2.39	-0.02	0.71	2.42	0.50	2.39	1.21	268.46
YGR200C	ELP2	0.94	1.15	1.25	1.71	1.93	2.11	0.14	-0.16	9.63	-0.41	9.77	-0.57	255.03
YGR201C	YGR201c	0.94	1.36	1.57	1.97	2.16	2.30	3.24	3.20	12.49	5.73	15.73	8.93	286.05
YGR202C	PCT1	1.06	1.32	1.48	2.03	2.21	2.34	11.36	0.64	54.95	18.31	66.31	18.95	305.37
YGR203W	YCH1	1.06	1.55	1.83	2.24	2.36	2.45	0.17	0.08	5.52	-0.64	5.69	-0.56	262.99
YGR204C-A	YGR204c-a	0.91	1.25	1.39	1.73	1.90	2.03	8.57	1.48	55.11	18.19	63.67	19.67	299.82
YGR204W	ADE3	0.83	1.14	1.14	1.07	1.16	1.20	103.87	104.13	119.22	113.86	223.09	217.99	488.50
YGR205W	YGR205w	1.03	1.45	1.71	2.14	2.28	2.39	0.26	0.18	11.88	0.26	12.13	0.44	279.39
YGR206W	MVB12	0.97	1.22	1.36	1.78	2.02	2.18	0.16	0.09	13.98	0.65	14.14	0.74	266.89
YGR207C	YGR207c	1.04	1.42	1.61	2.07	2.22	2.35	0.43	0.10	19.60	6.80	20.03	6.90	289.25
YGR208W	SER2	0.85	1.19	1.33	1.67	1.92	2.07	2.35	1.53	21.93	8.05	24.28	9.57	258.15
YGR209C	TRX2	0.93	1.16	1.29	1.81	2.01	2.15	0.09	0.09	5.66	0.12	5.74	0.21	258.46
YGR210C	YGR210c	0.98	1.53	1.72	2.07	2.23	2.32	8.52	3.30	42.27	14.19	50.79	17.50	301.24
YGR212W	SLI1	0.90	1.19	1.40	1.96	2.13	2.24	0.11	0.03	10.33	1.66	10.44	1.69	273.25
YGR213C	RTA1	0.94	1.36	1.61	2.08	2.23	2.30	3.14	0.20	36.66	9.76	39.79	9.96	305.22
YGR214W	RPS0a	0.95	1.20	1.33	1.93	2.19	2.31	1.87	0.32	31.88	3.76	33.75	4.08	291.99
YGR215W	RSM27	0.88	1.09	1.12	1.30	1.67	1.93	19.80	9.91	71.62	53.90	91.42	63.82	287.98
YGR217W	CCH1	0.96	1.29	1.50	2.01	2.20	2.31	0.99	0.46	23.45	2.43	24.44	2.89	275.29
YGR219W	YGR219w	0.93	1.01	1.03	0.93	0.94	0.91	123.18	122.28	143.88	111.54	267.06	233.82	423.73
YGR220C	MRPL9	1.05	1.33	1.25	1.25	1.26	1.12	103.05	117.98	115.61	128.69	218.65	246.67	539.93
YGR221C	TOS2	0.95	1.26	1.42	1.89	2.05	2.19	13.36	4.35	57.27	29.61	70.62	33.95	334.64
YGR222W	PET54	0.95	1.03	1.05	0.96	0.96	0.93	119.80	124.20	140.81	114.07	260.61	238.27	431.07
YGR223C	HSV2	1.00	1.27	1.39	1.73	1.88	2.06	20.92	9.49	72.29	53.75	93.21	63.24	317.05
YGR224W	AZR1	0.98	1.22	1.34	1.79	1.98	2.16	10.25	3.08	56.06	11.72	66.31	14.80	326.52
YGR225W	AMA1	1.01	1.32	1.49	1.90	2.07	2.22	5.85	3.09	39.58	8.14	45.43	11.23	309.97
YGR225W	AMA1	0.98	1.34	1.52	1.89	2.03	2.17	10.33	1.23	61.97	15.99	72.30	17.22	302.21
YGR226C	YGR226c	1.03	1.36	1.55	1.99	2.14	2.28	6.66	3.26	41.26	12.69	47.92	15.95	304.31
YGR227W	DIE2	0.99	1.33	1.53	1.98	2.12	2.26	5.04	3.18	34.85	10.21	39.90	13.38	297.19
YGR228W	YGR228w	1.03	1.38	1.58	2.03	2.17	2.32	3.94	3.04	23.78	5.79	27.72	8.83	282.71
YGR229C	SMI1	0.93	1.12	1.27	1.53	1.70	1.82	2.97	0.69	32.54	8.08	35.51	8.77	285.13
YGR230W	BNS1	0.99	1.27	1.36	1.68	1.82	2.02	5.55	3.16	35.82	11.29	41.38	14.45	301.89
YGR231C	PHB2	1.04	1.30	1.39	1.76	1.94	2.11	12.97	4.17	58.91	27.35	71.87	31.52	322.66
YGR232W	NAS6	0.97	1.27	1.39	1.85	2.04	2.22	8.79	3.57	51.04	20.26	59.83	23.83	311.54
YGR233C	PHO81	0.90	1.10	1.14	1.75	1.84	1.86	10.50	6.25	51.58	43.23	62.08	49.48	311.95
YGR234W	YHB1	1.02	1.48	1.60	2.03	2.15	2.25	9.69	3.55	50.68	18.98	60.38	22.54	308.30
YGR235C	YGR235c	1.08	1.34	1.45	1.92	2.10	2.22	17.87	6.16	65.98	42.43	83.86	48.59	336.37
YGR236C	SPG1	0.99	1.29	1.45	1.88	2.05	2.19	14.53	3.96	60.33	25.20	74.86	29.17	331.58
YGR237C	YGR237c	0.99	1.38	1.55	1.98	2.12	2.25	3.46	3.07	19.69	4.31	23.16	7.39	300.24
YGR238C	KEL2	0.92	1.14	1.38	1.88	2.06	2.20	9.58	1.07	54.53	17.85	64.11	18.93	321.38
YGR239C	PEX21	0.93	1.13	1.33	1.74	1.92	2.08	9.27	4.36	52.95	38.39	62.23	42.75	291.82
YGR240C	PFK1	0.89	1.26	1.36	1.73	1.91	2.06	2.78	3.07	37.00	39.02	39.78	42.09	249.56
YGR241C	YAP1802	1.00	1.30	1.39	1.87	2.05	2.23	8.64	3.80	50.70	22.91	59.34	26.71	299.81
YGR242W	YGR242w	1.02	1.33	1.38	1.75	1.91	2.06	8.02	3.27	45.40	21.51	53.41	24.78	298.04
YGR243W	FMP43	1.01	1.30	1.38	1.88	2.09	2.24	4.76	3.23	32.61	12.61	37.37	15.84	280.23
YGR244C	LSC2	0.93	1.28	1.39	1.88	2.04	2.19	8.26	4.02	46.85	27.78	55.11	31.80	308.78
YGR244C	LSC2	0.92	1.25	1.34	1.73	1.92	2.07	8.21	1.32	51.20	16.09	59.41	17.41	292.67
YGR247W	CPD1	0.99	1.30	1.38	1.91	2.08	2.23	10.97	4.86	55.91	31.28	66.88	36.14	310.43
YGR248W	SOL4	0.96	1.22	1.44	1.88	2.06	2.20	7.25	1.96	51.58	25.80	58.83	27.76	305.67
YGR249W	MGA1	0.93	1.24	1.28	1.79	1.99	2.14	12.77	5.50	55.14	39.20	67.91	44.71	323.76
YGR250C	YGR250c	0.91	1.10	1.29	1.75	1.96	2.16	1.48	0.68	20.87	9.21	22.36	9.89	274.95
YGR252W	GCN5	0.91	1.16	1.17	1.35	1.58	1.74	30.39	11.69	97.05	57.58	127.44	69.27	346.71
YGR254W	ENO1	0.96	1.24	1.45	1.87	2.05	2.19	7.94	1.02	48.89	19.60	56.83	20.62	333.23
YGR255C	COQ6	0.85	1.12	1.10	0.91	0.92	0.82	120.28	122.14	138.72	108.73	259.00	230.87	477.69
YGR256W	GND2	0.91	1.33	1.45	1.81	1.98	2.08	18.37	8.17	60.03	36.91	78.40	45.07	352.33
YGR257C	MTM1	0.89	1.07	1.04	0.92	0.92	0.86	121.62	122.77	138.34	110.48	259.96	233.25	476.38
YGR258C	RAD2	1.10	1.44	1.69	2.09	2.22	2.30	6.31	2.84	43.43	27.91	49.74	30.76	303.09
YGR259C	YGR259c	1.00	1.59	1.74	2.07	2.20	2.27	11.70	9.00	51.57	43.05	63.26	52.06	324.81
YGR260W	TNA1	0.98	1.52	1.71	2.07	2.19	2.27	7.92	11.64	43.73	48.12	51.65	59.76	314.77
YGR261C	APL6	0.96	1.49	1.61	1.90	2.05	2.15	5.23	13.25	36.16	55.34	41.40	68.59	295.61
YGR262C	BUD32	0.81	1.08	1.04	0.92	0.98	1.06	71.32	53.22	107.78	93.47	179.10	146.69	326.98
YGR263C	SAY1	1.05	1.59	1.69	1.93	2.07	2.16	4.96	8.24	32.17	43.22	37.12	51.45	291.82
YGR266W	YGR266w	0.98	1.52	1.63	2.00	2.13	2.23	12.90	8.14	51.82	41.08	64.72	49.22	331.54
YGR268C	HUA1	1.03	1.62	1.83	2.20	2.31	2.38	19.26	10.40	58.96	45.68	78.22	56.08	357.42
YGR269W	YGR269w	0.95	1.42	1.56	1.91	2.06	2.16	12.62	6.91	50.46	36.62	63.07	43.53	334.57
YGR270W	YTA7	0.93	1.35	1.42	1.79	2.02	2.14	12.06	6.43	48.08	35.91	60.14	42.34	344.10
YGR271C-A	EFG1	0.88	1.08	1.12	1.28	1.56	1.82	30.17	15.75	88.77	53.18	118.94	68.93	335.88
YGR271W	SLH1	1.02	1.30	1.49	1.88	2.08	2.27	9.71	0.79	49.74	4.23	59.45	5.02	328.41
YGR272C	YGR272c	0.86	1.11	1.10	1.23	1.48	1.68	49.80	33.48	109.11	76.31	158.91	109.80	373.79
YGR273C	YGR273c	0.96	1.21	1.38	1.74	1.92	2.10	1.10	0.85	19.65	11.05	20.74	11.90	273.01
YGR275W	RTT102	0.91	1.30	1.39	1.73	1.93	2.04	14.50	8.09	54.54	40.26	69.05	48.35	349.18
YGR276C	RNH70	0.99	1.29	1.51	1.92	2.08	2.21	1.23	0.94	19.73	10.79	20.96	11.73	267.93
YGR279C	SCW4	0.99	1.41	1.53	1.93	2.12	2.20	17.81	11.96	59.32	49.18	77.13	61.14	351.26
YGR281W	YOR1	1.05	1.48	1.73	2.01	2.19	2.25	14.87	7.64	56.47	37.39	71.35	45.02	346.54
YGR282C	BGL2	1.04	1.56	1.78	2.09	2.23	2.28	14.88	10.44	56.33	46.22	71.22	56.66	329.44
YGR283C	YGR283c	0.99	1.48	1.72	2.13	2.25	2.32	12.46	6.73	54.28	32.32	66.74	39.04	337.74
YGR284C	ERV29	0.92	1.28	1.40	1.77	1.93	2.05	20.49	8.07	67.70	41.15	88.19	49.22	344.77
YGR285C	ZUO1	0.98	1.32	1.41	1.54	1.70	1.87	2.86	3.02	6.65	2.17	9.51	5.19	303.12
YGR286C	BIO2	0.94	1.40	1.60	2.04	2.19	2.30	5.18	3.07	34.08	7.53	39.26	10.60	299.43
YGR287C	IMA1	0.95	1.43	1.64	2.01	2.15	2.23	10.39	4.43	49.14	27.18	59.53	31.61	319.18
YGR288W	MAL13	0.90	1.29	1.38	1.74	1.72	1.86	14.17	6.81	54.57	38.74	68.74	45.55	334.85
YGR289C	MAL11	0.97	1.21	1.38	1.72	1.94	2.13	0.75	0.85	7.23	4.11	7.98	4.97	259.91
YGR290W	YGR290w	0.93	1.39	1.58	1.99	2.13	2.24	11.28	3.97	48.06	21.61	59.34	25.58	334.40
YGR291C	YGR291c	0.96	1.21	1.38	1.74	1.92	2.08	0.97	0.90	16.58	9.09	17.55	10.00	271.27
YGR292W	MAL12	0.94	1.16	1.35	1.77	1.97	2.10	5.33	1.88	43.87	22.99	49.20	24.87	286.90
YGR295C	COS6	1.01	1.25	1.47	1.96	2.12	2.27	5.30	0.88	47.44	9.12	52.74	10.00	302.64
YHL001W	RPL14b	0.96	1.20	1.28	1.65	1.87	2.03	7.05	1.46	49.59	17.80	56.63	19.26	284.50
YHL002W	HSE1	1.07	1.58	1.72	2.06	2.19	2.29	4.96	4.04	39.80	25.92	44.75	29.96	294.15
YHL003C	LAG1	0.91	1.20	1.34	1.69	1.90	2.07	1.54	1.37	17.56	6.16	19.09	7.53	294.74
YHL004W	MRP4	0.91	1.09	1.07	0.96	0.96	0.93	128.10	125.73	133.00	98.69	261.10	224.42	506.34
YHL005C	YHL005c	0.85	1.08	1.16	1.41	1.60	1.81	1.38	1.41	11.80	2.85	13.18	4.26	294.52
YHL006C	SHU1	0.95	1.21	1.32	1.75	1.92	2.08	0.04	-0.05	1.81	-0.88	1.85	-0.94	287.25
YHL007C	STE20	0.92	1.22	1.39	1.89	2.07	2.16	1.20	-0.04	29.58	8.08	30.79	8.03	290.57
YHL008C	YHL008c	1.00	1.36	1.56	2.03	2.21	2.32	-0.05	-0.13	4.32	0.04	4.27	-0.08	284.30
YHL009C	YAP3	0.96	1.36	1.58	2.05	2.19	2.31	-0.01	-0.12	4.58	-0.14	4.57	-0.25	262.24

ORF.name	Strain	Optical density at 600 nm at regular intervals (h)						GLUCOSE		FRUCTOSE		TOTAL SUGARS (g/l)		TOTAL AMINO ACIDS (mg/L)
		0	26	33	48	59	78	102 h	118 h	102 h	118 h	102 h	118 h	102 h
YHL010C	ETP1	0.98	1.35	1.58	2.06	2.23	2.34	0.02	-0.04	6.57	0.04	6.59	0.01	275.01
YHL011C	PRS3	1.01	1.40	1.44	1.75	1.93	2.10	6.93	4.07	47.01	36.29	53.94	40.36	358.54
YHL012W	YHL012w	1.02	1.34	1.53	2.03	2.20	2.31	3.02	0.07	36.27	9.95	39.30	10.02	295.00
YHL013C	OTU2	1.03	1.44	1.63	2.06	2.25	2.36	-0.01	-0.06	2.96	-0.24	2.97	-0.31	284.71
YHL014C	YLF2	1.00	1.38	1.60	2.05	2.23	2.34	0.02	0.02	5.66	-0.21	5.68	-0.19	267.87
YHL015W-A	YHL015w-a	0.93	1.27	1.51	1.89	2.04	2.18	8.55	1.74	54.69	18.95	63.24	20.70	299.09
YHL016C	DUR3	0.94	1.22	1.40	1.91	2.09	2.23	0.05	0.02	8.21	0.90	8.27	0.91	282.80
YHL017W	YHL017w	1.00	1.35	1.56	1.98	2.14	2.30	0.04	-0.01	3.83	-0.65	3.87	-0.67	283.55
YHL019C	APM2	0.99	1.25	1.41	1.88	2.08	2.22	0.02	-0.01	9.02	0.23	9.04	0.22	284.35
YHL020C	OPI1	0.98	1.21	1.33	2.28	2.19	2.15	25.67	14.74	77.75	66.04	103.42	80.78	327.98
YHL021C	AIM17	0.94	1.23	1.39	1.90	2.10	2.21	0.12	-0.02	10.24	-0.26	10.36	-0.28	276.51
YHL022C	SPO11	0.97	1.37	1.57	2.02	2.15	2.29	0.12	0.14	5.44	-0.70	5.57	-0.56	293.06
YHL023C	NPR3	0.97	1.21	1.33	1.89	2.09	2.20	6.83	0.43	54.98	21.23	61.81	21.66	285.42
YHL024W	RIM4	0.91	1.35	1.53	1.90	2.06	2.19	8.88	3.81	43.22	22.48	52.10	26.29	296.37
YHL025W	SNF6	0.93	1.27	1.39	1.71	1.90	2.07	13.39	3.78	57.96	25.17	71.35	28.95	367.51
YHL026C	YHL026c	0.93	1.23	1.42	1.89	2.08	2.23	0.08	-0.01	3.95	-0.58	4.03	-0.58	273.74
YHL027W	RIM101	0.89	1.18	1.34	1.77	1.95	2.09	2.22	0.16	27.76	5.98	29.98	6.13	286.98
YHL028W	WSC4	1.00	1.33	1.48	1.95	2.13	2.27	0.29	0.02	17.95	3.18	18.24	3.20	285.61
YHL029C	OCA5	1.05	1.55	1.78	2.16	2.33	2.35	0.03	-0.07	-0.11	-1.00	-0.08	-1.07	237.92
YHL030W	ECM29	0.86	1.09	1.21	1.45	1.68	1.87	1.32	1.36	4.56	1.76	5.87	3.11	293.16
YHL031C	GOS1	0.97	1.28	1.50	1.99	2.17	2.33	0.56	0.04	15.38	2.25	15.94	2.29	279.67
YHL032C	GUT1	1.05	1.50	1.72	2.13	2.29	2.43	0.24	0.04	0.27	-0.93	0.51	-0.89	271.07
YHL033C	RPL8a	1.03	1.30	1.49	1.98	2.18	2.28	0.12	0.06	0.73	-0.75	0.84	-0.69	257.06
YHL034C	SBP1	1.02	1.27	1.41	1.91	2.13	2.23	6.31	0.66	42.80	11.00	49.11	11.66	312.24
YHL035C	VMR1	0.93	1.21	1.40	1.89	2.09	2.20	0.15	0.33	11.09	1.35	11.24	1.68	281.51
YHL036W	MUP3	0.96	1.28	1.44	1.91	2.09	2.21	0.00	0.00	10.07	-0.38	10.07	-0.38	287.90
YHL037C	YHL037c	1.03	1.44	1.66	2.17	2.34	2.41	1.20	-0.01	26.19	1.87	27.39	1.86	296.39
YHL038C	CBP2	0.93	1.14	1.11	0.97	1.02	0.94	124.63	124.69	131.63	135.21	256.26	259.90	538.63
YHL039W	EFM1	0.99	1.50	1.63	1.99	2.13	2.21	7.80	5.96	40.24	32.14	48.03	38.11	304.31
YHL040C	ARN1	0.89	1.19	1.30	1.72	1.90	2.05	0.02	0.13	1.05	-0.90	1.07	-0.76	275.56
YHL041W	YHL041w	1.03	1.44	1.62	2.04	2.21	2.36	0.00	0.01	0.11	-1.04	0.11	-1.02	263.44
YHL042W	YHL042w	0.98	1.35	1.55	2.01	2.16	2.30	0.79	0.02	24.23	2.65	25.02	2.67	293.11
YHL043W	ECM34	0.96	1.30	1.51	2.01	2.15	2.29	2.51	0.07	34.63	6.36	37.14	6.42	294.82
YHL044W	YHL044w	0.94	1.27	1.45	1.90	2.10	2.26	0.08	0.09	1.22	-0.88	1.29	-0.80	276.18
YHL045W	YHL045w	0.95	1.28	1.47	1.96	2.13	2.31	0.10	0.05	3.21	-0.64	3.31	-0.59	264.14
YHL046C	PAU13	1.03	1.60	1.74	2.11	2.28	2.34	0.04	0.02	0.43	-0.99	0.47	-0.97	262.46
YHL047C	ARN2	1.06	1.39	1.62	2.16	2.33	2.43	0.94	0.71	27.24	6.63	28.18	7.34	290.59
YHR001W	OSH7	0.94	1.25	1.39	1.76	1.92	2.05	4.87	1.32	41.11	13.97	45.98	15.29	285.95
YHR001W-A	QCR10	0.99	1.33	1.55	2.02	2.19	2.32	-0.07	-0.15	5.81	0.27	5.74	0.12	268.42
YHR003C	YHR003c	1.01	1.47	1.60	1.96	2.10	2.21	11.10	12.69	53.70	49.90	64.80	62.59	315.62
YHR004C	NEM1	0.97	1.44	1.57	1.89	2.02	2.08	22.44	17.03	65.23	58.71	87.66	75.74	347.40
YHR005C	GPA1	0.96	1.19	1.42	1.81	2.02	2.18	7.80	0.87	46.45	6.95	54.25	7.82	295.00
YHR006W	STP2	1.00	1.53	1.68	2.08	2.23	2.32	4.77	4.49	28.65	24.91	33.42	29.41	275.41
YHR007C-A	YHR007c-a	0.93	1.27	1.48	1.84	2.02	2.15	11.46	3.97	61.50	30.34	72.96	34.31	308.58
YHR008C	SOD2	0.97	1.45	1.60	1.96	2.12	2.21	7.21	3.09	41.29	10.97	48.50	14.06	302.03
YHR009C	YHR009c	0.96	1.54	1.72	2.08	2.21	2.29	3.73	3.00	18.45	2.62	22.19	5.63	284.69
YHR010W	RPL27a	0.88	1.07	1.06	1.08	1.36	1.73	41.93	25.78	102.97	68.92	144.90	94.70	319.31
YHR011W	DIA4	0.92	1.23	1.32	1.86	2.12	2.30	14.14	4.30	63.34	37.36	77.48	41.66	265.74
YHR012W	VPS29	0.94	1.25	1.39	1.74	1.88	2.04	0.83	-0.13	26.24	5.44	27.07	5.31	332.43
YHR013C	ARD1	1.01	1.29	1.49	2.01	2.18	2.27	1.81	-0.01	18.65	5.75	20.45	5.74	243.62
YHR014W	SPO13	0.98	1.35	1.56	2.00	2.17	2.30	-0.09	-0.17	8.26	0.84	8.17	0.67	265.95
YHR015W	MIP6	0.97	1.26	1.41	1.86	2.07	2.22	-0.09	-0.04	1.72	-0.78	1.63	-0.82	260.53
YHR016C	YSC84	0.86	1.21	1.30	1.58	1.75	1.91	8.96	3.13	43.90	12.02	52.86	15.15	263.17
YHR017W	YSC83	0.85	1.26	1.37	1.73	1.92	2.05	7.35	3.72	36.49	18.18	43.84	21.90	302.34
YHR018C	ARG4	0.88	1.10	1.13	1.30	1.53	1.74	16.02	3.54	73.92	38.97	89.94	42.51	304.57
YHR021C	RPS27b	0.84	1.09	1.10	1.37	1.66	1.90	1.98	0.29	33.65	6.57	35.62	6.86	264.16
YHR021W-A	ECM12	0.93	1.37	1.53	1.96	2.10	2.21	13.08	5.20	56.49	29.66	69.57	34.85	326.21
YHR022C	YHR022c	0.92	1.16	1.32	1.86	2.06	2.19	-0.03	-0.07	6.86	0.00	6.83	-0.07	276.83
YHR022C-A	YHR022c-a	0.97	1.15	1.29	1.58	1.79	1.96	11.95	6.09	58.59	34.32	70.54	40.41	314.52
YHR025W	THR1	0.91	1.29	1.43	1.79	2.00	2.13	1.47	1.28	19.70	5.87	21.17	7.15	280.31
YHR026W	PPA1	0.89	1.18	1.18	1.20	1.47	1.69	35.30	10.27	101.64	68.32	136.94	78.58	308.08
YHR028C	DAP2	0.92	1.11	1.30	1.69	1.93	2.09	1.47	0.80	21.31	4.09	22.78	4.89	289.55
YHR029C	YHI9	0.94	1.25	1.43	1.94	2.11	2.24	-0.03	-0.25	10.11	-0.46	10.08	-0.71	270.28
YHR030C	SLT2	0.94	1.17	1.18	1.04	1.04	0.99	127.16	120.33	136.35	126.44	263.51	246.78	539.08
YHR031C	RRM3	1.07	1.35	1.52	2.04	2.36	2.30	5.29	2.71	43.23	34.51	48.52	37.22	289.88
YHR032W	ERC1	0.89	1.26	1.40	1.76	1.92	2.02	10.59	4.58	46.13	26.74	56.72	31.32	319.49
YHR033W	YHR033w	0.89	1.07	1.21	1.60	1.80	1.96	13.94	2.30	55.73	22.99	69.67	25.29	326.87
YHR034C	PIH1	1.04	1.29	1.44	1.95	2.20	2.33	7.35	0.86	46.91	13.06	54.25	13.93	289.88
YHR035W	YHR035w	1.04	1.37	1.58	2.04	2.22	2.33	4.82	3.63	38.03	38.29	42.85	41.92	279.77
YHR037W	PUT2	1.01	1.33	1.50	1.97	2.16	2.29	3.97	2.26	37.93	16.71	41.89	18.97	276.30
YHR038W	RRF1	0.95	1.28	1.48	2.00	2.17	2.28	9.98	2.92	55.08	34.98	65.06	37.90	269.65
YHR039C	MSC7	0.98	1.36	1.60	2.11	2.28	2.37	1.25	0.69	19.28	-0.05	20.53	0.64	260.59
YHR039C-B	YHR039C-B	0.91	1.12	1.12	1.14	1.44	1.72	46.37	26.69	104.56	85.17	150.94	111.86	324.82
YHR041C	SRB2	0.87	1.20	1.23	1.45	1.70	1.97	36.26	21.43	87.16	72.51	123.42	93.93	381.51
YHR043C	DOG2	0.98	1.30	1.47	1.96	2.17	2.32	1.97	-0.02	21.95	0.79	23.93	0.78	245.05
YHR044C	DOG1	0.95	1.33	1.53	2.03	2.20	2.33	1.09	0.50	15.78	1.33	16.87	1.83	255.07
YHR045W	YHR045w	0.87	1.22	1.37	1.72	1.92	2.06	5.91	2.99	35.51	9.23	41.42	12.22	325.00
YHR046C	INM1	0.88	1.14	1.33	1.84	2.05	2.18	0.63	4.67	3.21	46.09	3.84	50.76	273.36
YHR047C	AAP1	0.99	1.34	1.56	2.06	2.25	2.36	5.98	1.29	45.31	19.70	51.29	20.99	272.92
YHR048W	YHK8	0.95	1.24	1.48	2.00	2.17	2.28	3.14	1.51	26.90	27.70	30.03	29.21	298.03
YHR049C-A	YHR049c-a	1.03	1.34	1.53	2.00	2.18	2.29	4.44	7.47	39.39	54.52	43.84	61.99	296.09
YHR049W	FSH1	0.99	1.35	1.64	2.17	2.33	2.41	0.97	1.58	20.20	2.66	21.17	4.25	262.57
YHR050W	SMF2	0.99	1.29	1.49	1.83	2.05	2.17	5.58	10.30	41.65	62.62	47.21	72.92	303.19
YHR050W-A	YHR050w-a	0.93	1.06	1.07	0.94	0.94	0.91	122.22	122.52	135.44	105.02	257.66	227.54	482.66
YHR051W	COX6	0.83	1.11	1.19	1.55	1.78	1.95	16.06	4.43	61.15	32.85	77.21	37.28	319.08
YHR057C	CPR2	1.00	1.39	1.59	2.03	2.21	2.29	11.44	7.35	55.54	47.64	66.98	54.99	276.10
YHR059W	FYV4	1.03	1.42	1.46	1.82	2.03	2.18	24.46	15.59	74.26	65.77	98.72	81.36	359.68
YHR060W	VMA22	0.89	1.22	1.36	1.73	1.95	2.09	15.61	5.55	63.63	38.80	79.25	44.35	320.66
YHR061C	GIC1	0.99	1.27	1.42	1.88	2.09	2.22	1.82	1.67	22.08	22.76	23.90	24.43	273.50
YHR063C	PAN5	0.91	1.23	1.39	1.77	1.97	2.12	3.52	1.00	36.26	9.77	39.78	10.77	273.99
YHR064C	SSZ1	0.86	1.18	1.28	1.70	1.94	2.09	3.36	3.03	16.64	2.52	19.99	5.55	290.38
YHR066W	SSF1	0.92	1.18	1.28	1.77	1.98	2.13	1.38	1.06	13.49	7.57	14.87	8.63	256.55
YHR067W	HTD2	1.03	1.49	1.67	2.08	2.22	2.30	7.73	5.06	41.17	29.95	48.90	35.00	315.19
YHR071W	PCL5	0.91	1.28	1.46	1.84	2.03	2.17	6.39	1.28	49.84	15.33	56.24	16.61	281.63
YHR073W	OSH3	0.89	1.17	1.34	1.85	2.06	2.22	25.37	0.23	78.08	2.73	103.45	2.96	257.01
YHR075C	PPE1	0.92	1.23	1.45	1.96	2.14	2.25	121.11	1.13	124.62	20.14	245.73	21.27	261.47
YHR076W	PTC7	0.90	1.11	1.24	1.77	2.01	2.14	113.26	1.34	120.97	21.01	234.23	22.35	288.52
YHR077C	NMD2	0.99	1.29	1.54	2.08	2.24	2.34	7.61	1.80	49.12	21.19	56.72	23.00	258.84
YHR078W	YHR078w	1.04	1.37	1.56	2.01	2.17	2.29	95.51	2.11	122.74	25.20	218.25	27.31	257.54
YHR079C	IRE1	1.07	1.40	1.60	2.05	2.23	2.36	14.98	1.15	62.99	11.02	77.98	12.17	258.29
YHR079C-B	YHR079C-B	0.98	1.37	1.54	1.99	2.15	2.27	7.63	2.56	44.12	13.01	51.75	15.57	318.80
YHR080C	YHR080c	0.94	1.27	1.45	1.92	2.11	2.26	1.38	1.01	16.39	0.51	17.78	1.52	253.36
YHR081W	LRP1	1.04	1.30	1.43	1.92	2.13	2.27	1.80	1.03	22.86	3.15	24.66	4.18	261.57
YHR082C	KSP1	0.98	1.26	1.39	1.80	2.02	2.12	2.33	1.00	27.76	5.82	30.09	6.82	201.58
YHR086W	NAM8	1.01	1.37	1.57	2.05	2.23	2.33	1.10	1.14	10.39	10.98	11.49	12.12	280.60
YHR086W-A	YHR086w-a	0.97	1.31	1.45	1.98	1.94	2.11	11.57	2.76	60.95	25.80	72.52	28.56	320.36
YHR087W	RTC3	0.87	1.35	1.49	1.80	1.97	2.09	16.49	3.25	64.05	28.70	80.54	31.95	332.63
YHR090C	YNG2	0.97	1.14	1.14	1.03	1.07	1.14	101.59	91.98	123.25	93.33	224.85	185.31	448.89
YHR091C	MSR1	0.90	1.16	1.31	1.69	1.90	2.03	2.35	3.83	32.10	30.00	34.45	33.83	266.74
YHR091C	MSR1	0.91	1.35	1.55	1.96	2.15	2.27	12.75	7.60	57.41	45.57	70.16	53.17	315.25
YHR092C	HXT4	0.88	1.20	1.41	1.93	2.11	2.21	2.38	0.99	30.34	0.11	32.73	1.10	262.78
YHR093W	AHT1	0.86	1.10	1.25	1.81	2.01	2.14	122.54	1.02	125.58	3.61	248.12	4.63	285.84
YHR094C	HXT1	0.87	1.08	1.21	1.78	2.01	2.16	122.08	0.98	124.65	1.63	246.73	2.61	280.86
YHR095W	YHR095w	0.95	1.19	1.37	1.93	2.12	2.24	105.49	1.06	116.66	14.63	222.15	15.69	306.15
YHR096C	HXT5	1.03	1.38	1.58	2.06	2.24	2.36	13.78	0.97	62.45	6.43	76.22	7.40	275.60
YHR097C	YHR097c	1.01	1.34	1.57	2.06	2.23	2.33	5.07	3.40	38.53	36.88	43.61	40.27	306.57
YHR098C	SFB3	0.94	1.15	1.31	1.66	1.89	2.06	9.06	1.55	53.02	17.47	62.08	19.02	281.53
YHR100C	GEP4	0.90	1.17	1.29	1.69	1.95	2.09	0.99	1.19	5.18	0.46	6.17	1.65	239.80
YHR103W	SBE22	0.94	1.21	1.35	1.77	1.97	2.10	3.71	1.17	36.20	10.62	39.91	11.79	284.18
YHR104W	GRE3	0.91	1.19	1.30	1.72	1.96	2.07	2.75	1.21	33.43	10.30	36.19	11.51	282.19
YHR105W	YPT35	0.97	1.29	1.46	1.98	2.18	2.34	1.33	1.16	15.36	0.00	16.69	1.16	271.57
YHR106W	TRR2	0.99	1.31	1.50	2.00	2.18	2.30	1.14	1.20	3.42	4.03	4.56	5.23	283.76
YHR108W	GGA2	0.93	1.22	1.34	1.77	1.98	2.12	128.05	1.07	127.92	0.31	255.98	1.38	279.39
YHR109W	CTM1	0.89	1.19	1.37	1.91	2.12	2.25	22.99	1.13	77.44	3.45	100.43	4.58	287.40
YHR110W	ERP5	0.91	1.17	1.32	1.87	2.10	2.26	4.18	0.71	38.07	0.31	42.25	1.01	277.94
YHR111W	UBA4	0.87	1.05	1.13	1.69	1.96	2.13	10.80	1.32	55.32	13.97	66.12	15.29	277.73
YHR112C	YHR112c	0.97	1.21	1.40	1.97	2.19	2.33	2.26	1.03	28.76	0.06	31.03	1.09	270.31
YHR113W	YHR113w	1.02	1.37	1.58	2.07	2.25	2.38	19.80	1.19	66.76	2.95	86.56	4.14	261.27
YHR114W	BZZ1	1.06	1.39	1.61	2.07	2.24	2.35	2.97	1.13	31.89	8.09	34.87	9.22	284.83
YHR115C	DMA1	0.95	1.26	1.45	1.95	2.14	2.25	5.68	1.34	44.13	13.49	49.81	14.83	295.69
YHR116W	COX23	0.94	1.18	1.31	1.73	1.92	2.04	4.38	1.29	40.13	13.38	44.50	14.67	279.78
YHR117W	TOM71	0.91	1.15	1.25	1.71	1.93	2.08	1.12	1.23	0.51	12.79	1.63	14.02	297.93
YHR120W	MSH1	0.85	1.10	1.23	1.68	1.78	1.87	2.45	1.28	30.86	10.85	33.31	12.13	227.58
YHR121W	LSM12	0.95	1.25	1.41	1.90	2.06	2.19	0.99	1.18	3.75	7.43	4.74	8.62	306.14

ORF.name	Strain	Optical density at 600 nm at regular intervals (h)						GLUCOSE		FRUCTOSE		TOTAL SUGARS (g/l)		TOTAL AMINO ACIDS (mg/L)
		0	26	33	48	59	78	102 h	118 h	102 h	118 h	102 h	118 h	102 h
YHR123W	EPT1	0.88	1.12	1.24	1.71	1.93	2.02	1.14	1.12	9.63	8.26	10.77	9.38	287.48
YHR124W	NDT80	0.87	1.12	1.28	1.82	2.14	2.18	127.68	1.05	124.78	5.88	252.46	6.93	295.54
YHR125W	YHR125w	0.91	1.17	1.35	1.92	2.13	2.21	20.65	1.19	73.24	8.94	93.88	10.13	285.49
YHR126C	ANS1	0.89	1.13	1.25	1.82	2.04	2.19	139.28	1.08	135.28	7.92	274.56	9.00	299.30
YHR127W	YHR127w	0.98	1.51	1.75	2.14	2.25	2.32	19.49	6.61	59.82	32.57	79.30	39.18	343.89
YHR129C	ARP1	0.95	1.14	1.19	1.66	1.89	2.08	3.31	12.69	35.36	72.20	38.67	84.89	314.85
YHR130C	YHR130c	1.00	1.29	1.47	1.98	2.17	2.29	11.08	1.13	57.94	12.49	69.02	13.62	300.27
YHR131C	YHR131c	1.02	1.56	1.79	2.17	2.29	2.37	6.00	3.14	35.71	7.19	41.71	10.33	301.31
YHR132C	ECM14	0.96	1.24	1.38	1.77	1.97	2.10	12.12	12.13	65.13	68.84	77.25	80.97	391.39
YHR132W-A	IGO2	0.90	1.06	1.22	1.78	1.99	2.16	3.71	0.85	38.42	4.03	42.13	4.88	297.74
YHR133C	NSG1	0.97	1.33	1.54	2.06	2.24	2.36	27.17	1.09	80.81	1.02	107.98	2.11	278.80
YHR134W	WSS1	0.95	1.20	1.33	1.80	2.00	2.14	122.41	2.26	120.09	29.48	242.51	31.74	326.16
YHR135C	YCK1	0.98	1.31	1.49	2.02	2.25	2.36	4.64	1.20	40.18	5.20	44.82	6.41	274.38
YHR136C	SPL2	0.89	1.19	1.30	1.67	1.88	2.03	13.81	4.54	60.18	29.53	73.99	34.07	312.38
YHR137W	ARO9	0.92	1.21	1.41	1.96	2.15	2.23	1.10	1.32	5.22	7.39	6.32	8.71	304.45
YHR138C	YHR138c	0.89	1.18	1.34	1.84	2.05	2.20	1.14	1.05	9.33	0.19	10.47	1.24	275.74
YHR139C	SPS100	0.91	1.23	1.40	1.97	2.16	2.26	1.32	1.09	12.83	1.41	14.16	2.51	286.10
YHR139C-A	YHR139c-a	0.96	1.24	1.41	1.91	2.10	2.22	1.48	1.28	18.15	10.25	19.63	11.53	296.89
YHR140W	YHR140w	0.92	1.28	1.51	1.93	2.10	2.20	9.58	3.39	46.51	20.89	56.09	24.28	311.21
YHR141C	RPL42b	0.93	1.15	1.17	1.20	1.45	1.88	36.33	16.00	95.96	57.37	132.29	73.37	332.04
YHR142W	CHS7	0.90	1.13	1.28	1.86	2.08	2.19	3.30	1.39	33.40	16.34	36.70	17.73	312.04
YHR143W	DSE2	0.97	1.18	1.31	1.92	2.14	2.27	4.46	1.08	38.69	11.37	43.15	12.45	306.52
YHR146W	CRP1	0.97	1.23	1.50	1.98	2.13	2.26	4.97	0.86	42.25	10.66	47.21	11.52	311.83
YHR147C	MRPL6	0.92	1.17	1.16	1.16	1.51	1.91	40.15	24.37	95.78	71.76	135.93	96.13	301.79
YHR149C	SKG6	0.92	1.29	1.45	1.87	2.04	2.17	5.59	1.30	44.87	13.99	50.46	15.29	289.27
YHR150W	PEX28	0.97	1.25	1.44	1.95	2.14	2.24	8.49	2.04	52.54	25.30	61.02	27.34	309.75
YHR151C	MTC6	0.96	1.27	1.48	1.99	2.14	2.21	4.14	1.45	36.75	16.25	40.89	17.70	324.51
YHR152W	SPO12	0.96	1.26	1.47	1.99	2.15	2.26	3.74	1.14	37.51	5.58	41.25	6.71	308.44
YHR153C	SPO16	0.91	1.17	1.34	1.90	2.09	2.20	0.93	1.21	4.97	7.12	5.90	8.33	314.35
YHR154W	RTT107	0.97	1.19	1.31	2.07	2.05	1.99	1.00	1.15	7.93	6.05	8.94	7.20	310.60
YHR155W	YSP1	0.95	1.27	1.49	2.00	2.15	2.25	1.12	0.99	0.54	8.48	1.66	9.47	310.88
YHR156C	LIN1	0.90	1.17	1.33	1.84	2.05	2.19	0.88	1.17	4.53	0.18	5.41	1.34	293.55
YHR157W	REC104	0.90	1.19	1.37	1.92	2.08	2.18	1.27	1.03	4.44	8.08	5.71	9.11	316.80
YHR158C	KEL1	0.88	1.08	1.19	1.92	2.20	2.30	1.10	0.92	17.04	2.50	18.14	3.43	288.51
YHR159W	YHR159w	0.90	1.14	1.28	1.84	2.05	2.18	4.97	1.23	39.67	14.33	44.64	15.55	314.48
YHR160C	PEX18	0.96	1.17	1.33	1.92	2.13	2.26	122.42	0.60	125.26	0.75	247.68	1.35	313.85
YHR161C	YAP1801	0.98	1.21	1.34	1.88	2.10	2.26	116.27	2.64	118.71	7.70	234.98	10.34	335.35
YHR162W	YHR162w	0.91	1.33	1.50	1.91	2.09	2.21	13.90	6.86	53.23	34.92	67.13	41.78	327.07
YHR163W	SOL3	0.97	1.28	1.45	2.01	2.21	2.35	15.43	1.04	61.70	0.46	77.13	1.50	294.71
YHR167W	THP2	0.98	1.22	1.33	1.81	1.99	2.13	126.39	7.47	121.76	56.86	248.15	64.33	379.80
YHR168W	MTG2	0.91	1.20	1.19	1.55	1.84	2.07	13.64	6.55	56.64	37.97	70.28	44.51	308.20
YHR171W	ATG7	1.01	1.21	1.42	1.93	2.13	2.26	25.89	4.94	77.82	43.80	103.72	48.74	331.06
YHR175W-A	YHR175w-a	0.93	1.12	1.08	0.97	0.97	0.95	120.68	122.10	135.34	104.12	256.02	226.22	472.78
YHR176W	FMO1	0.88	1.23	1.36	1.68	1.87	1.98	12.84	3.79	57.39	32.85	70.23	36.64	314.69
YHR177W	YHR177w	0.90	1.21	1.33	1.74	1.98	2.08	4.48	1.79	35.79	13.10	40.27	14.89	316.52
YHR178W	STB5	0.91	1.16	1.28	1.93	2.01	2.21	1.14	1.05	9.43	2.94	10.56	3.98	284.51
YHR179W	OYE2	0.91	1.19	1.36	1.90	2.08	2.19	1.74	0.81	23.62	7.78	25.36	8.58	293.68
YHR180W	YHR180w	0.99	1.54	1.76	2.14	2.26	2.33	7.12	3.20	40.81	9.69	47.92	12.89	304.24
YHR181W	SVP26	0.99	1.44	1.60	2.00	2.19	2.32	9.92	4.57	46.32	27.50	56.23	32.07	305.41
YHR182W	YHR182w	0.96	1.32	1.53	2.05	2.20	2.31	4.56	0.44	42.74	2.32	47.30	2.76	280.66
YHR183W	GND1	0.92	1.19	1.39	1.72	1.93	2.07	1.58	1.51	14.63	3.16	16.22	4.66	276.39
YHR184W	SSP1	0.92	1.17	1.35	1.89	2.10	2.23	21.37	0.96	71.37	6.56	92.74	7.52	315.76
YHR185C	PFS1	1.00	1.50	1.70	2.15	2.29	2.36	5.49	3.34	33.00	13.02	38.48	16.35	275.71
YHR187W	IKI1	1.00	1.29	1.42	1.78	1.94	2.06	27.66	5.87	80.22	35.66	107.88	41.53	333.74
YHR189W	PTH1	0.95	1.17	1.33	1.95	2.14	2.27	27.31	1.05	75.91	2.16	103.22	3.20	312.69
YHR191C	CTF8	0.94	1.25	1.25	1.47	1.73	1.98	43.33	32.30	83.76	77.32	127.08	109.62	394.10
YHR192W	YHR192w	0.98	1.31	1.48	1.85	2.03	2.18	4.64	1.01	39.08	7.63	43.71	8.63	276.44
YHR193C	EGD2	0.89	1.27	1.40	1.81	2.01	2.16	9.15	3.47	46.37	17.96	55.52	21.44	238.15
YHR194W	MDM31	0.95	1.56	1.75	2.09	2.21	2.29	8.57	3.41	46.68	14.83	55.26	18.24	315.19
YHR195W	NVJ1	0.94	1.18	1.37	1.92	2.15	2.27	5.53	0.69	33.96	2.94	39.50	3.62	340.69
YHR198C	AIM18	1.00	1.32	1.51	2.05	2.31	2.35	9.41	0.95	58.33	10.17	67.74	11.13	369.83
YHR199C	AIM46	0.94	1.20	1.36	1.81	2.03	2.15	1.57	1.07	20.17	4.29	21.75	5.35	326.06
YHR200W	RPN10	0.99	1.28	1.49	1.99	2.18	2.25	15.31	4.30	70.15	44.48	85.46	48.78	343.74
YHR202W	YHR202w	0.94	1.20	1.38	1.83	2.05	2.16	1.30	0.64	18.48	4.30	19.78	4.94	294.23
YHR203C	RPS4b	0.97	1.19	1.31	1.82	2.09	2.25	0.68	0.78	11.44	0.69	12.11	1.47	306.05
YHR204W	MNL1	0.96	1.29	1.50	1.96	2.15	2.26	1.20	0.74	19.01	3.08	20.21	3.81	312.21
YHR205W	SCH9	0.97	1.30	1.47	1.80	2.04	2.26	1.24	0.89	0.40	0.14	1.64	1.03	277.05
YHR206W	SKN7	0.96	1.22	1.39	1.91	2.12	2.24	5.51	0.98	42.73	9.44	48.24	10.42	322.14
YHR207C	SET5	0.89	1.12	1.26	1.74	1.92	2.03	16.41	3.51	67.36	36.99	83.77	40.51	353.39
YHR209W	CRG1	0.97	1.26	1.44	1.95	2.13	2.24	13.31	3.75	60.32	38.23	73.63	41.98	348.35
YHR210C	YHR210c	0.89	1.08	1.22	1.72	1.96	2.06	16.08	1.95	70.82	30.40	86.91	32.35	357.60
YIL001W	YIL001w	0.99	1.52	1.51	1.98	2.15	2.27	3.56	3.09	21.33	8.51	24.89	11.61	269.70
YIL002C	INP51	0.98	1.54	1.63	2.03	2.14	2.23	5.76	4.22	37.21	26.01	42.97	30.23	320.95
YIL002W-A	YIL002w-a	0.91	1.19	1.32	1.71	1.91	2.02	7.19	3.52	53.69	32.86	60.88	36.39	301.46
YIL005W	EPS1	0.97	1.42	1.40	1.81	1.98	2.15	5.47	3.72	38.98	24.12	44.44	27.84	288.19
YIL006W	YIA6	0.86	1.18	1.31	1.71	1.94	2.06	3.62	3.06	26.57	16.03	30.18	19.10	294.90
YIL007C	NAS2	0.92	1.31	1.50	1.90	2.09	2.21	8.61	3.94	44.01	23.84	52.62	27.78	322.52
YIL008W	URM1	0.87	1.16	1.25	1.65	1.87	2.01	17.89	7.86	59.71	39.60	77.61	47.46	357.66
YIL009C-A	EST3	0.94	1.26	1.44	1.79	1.96	2.08	23.96	18.13	70.02	64.26	93.98	82.38	365.81
YIL009W	FAA3	0.92	1.33	1.53	1.91	2.07	2.20	4.81	3.78	31.18	22.33	35.99	26.11	286.97
YIL010W	DOT5	0.91	1.32	1.47	1.80	1.96	2.05	18.79	14.21	60.36	53.31	79.15	67.52	362.47
YIL011W	TIR3	0.92	1.38	1.37	1.81	2.00	2.17	6.27	5.73	43.41	37.40	49.68	43.13	277.67
YIL012W	YIL012w	0.97	1.46	1.60	2.03	2.16	2.27	4.36	3.97	33.77	24.71	38.70	28.68	283.04
YIL013C	PDR11	1.01	1.57	1.70	2.07	2.22	2.33	3.70	4.60	24.12	30.11	27.82	34.71	281.18
YIL014W	MNT3	1.03	1.49	1.56	1.99	2.17	2.28	4.79	5.15	34.68	33.06	39.47	38.21	279.49
YIL015C-A	YIL015C-A	0.97	1.37	1.54	2.11	2.08	2.20	8.67	6.41	44.01	36.33	52.68	42.74	315.03
YIL015W	BAR1	0.92	1.47	1.58	1.93	2.07	2.18	3.38	3.79	18.58	19.34	21.96	23.13	258.06
YIL016W	SNL1	0.93	1.41	1.39	1.81	1.98	2.10	4.41	3.99	29.63	26.49	34.04	30.48	286.97
YIL017C	VID28	0.91	1.43	1.52	1.90	2.04	2.15	2.88	3.14	13.28	13.91	16.17	17.05	273.48
YIL018W	RPL2b	0.94	1.11	1.26	1.65	1.91	2.10	1.27	0.83	8.19	3.59	9.46	4.42	254.37
YIL020C	HIS6	0.86	1.07	1.03	0.86	0.92	0.84	120.12	120.21	121.52	116.75	241.64	236.96	537.43
YIL023C	YKE4	0.89	1.41	1.56	1.93	2.07	2.16	3.15	3.07	7.75	4.73	10.90	7.80	256.59
YIL024C	YIL024c	0.96	1.46	1.44	1.95	2.12	2.24	3.86	3.15	26.00	9.25	29.86	12.39	275.43
YIL025C	YIL025c	0.93	1.52	1.59	1.98	2.12	2.19	6.77	3.13	41.21	10.75	47.98	13.88	306.77
YIL027C	KRE27	0.99	1.44	1.38	1.87	2.08	2.25	3.12	2.92	15.89	4.39	19.01	7.31	313.76
YIL028W	YIL028w	0.97	1.52	1.57	2.02	2.16	2.29	2.97	3.70	12.54	26.69	15.51	30.39	276.76
YIL029C	YIL029c	0.96	1.54	1.66	2.04	2.18	2.29	2.93	3.40	12.36	18.03	15.30	21.43	276.29
YIL030C	SSM4	0.96	1.18	1.37	1.85	2.00	2.13	5.80	0.87	44.09	6.46	49.89	7.33	279.76
YIL032C	YIL032c	0.99	1.64	1.81	2.14	2.27	2.36	2.90	2.94	5.01	3.32	7.91	6.26	270.01
YIL034C	CAP2	0.99	1.46	1.62	2.03	2.17	2.29	3.20	3.07	17.90	9.75	21.10	12.82	267.23
YIL035C	CKA1	0.94	1.52	1.65	2.00	2.13	2.23	2.88	2.98	7.05	4.43	9.93	7.41	270.04
YIL036W	CST6	0.96	1.45	1.51	1.85	1.99	2.11	3.21	2.86	18.49	10.57	21.70	13.43	281.32
YIL037C	PRM2	0.89	1.36	1.38	1.79	1.94	2.08	3.16	3.17	22.06	12.14	25.22	15.30	291.06
YIL038C	NOT3	0.89	1.25	1.38	1.74	1.96	2.10	7.25	4.60	41.92	27.36	49.17	31.96	321.61
YIL039W	TED1	0.93	1.31	1.44	1.84	2.01	2.12	5.69	2.72	39.97	15.93	45.66	18.66	309.88
YIL040W	APQ12	0.91	1.34	1.40	1.77	1.92	2.04	14.85	9.75	67.45	59.00	82.30	68.75	328.84
YIL041W	GVP36	0.98	1.45	1.51	2.02	2.21	2.30	3.93	2.39	30.02	10.71	33.95	13.10	294.27
YIL041W	GVP36	0.92	1.13	1.33	1.70	1.91	2.06	9.27	1.12	54.49	10.53	63.76	11.65	285.95
YIL042C	PKP1	0.87	1.26	1.34	1.71	1.93	2.07	6.61	6.07	39.65	35.43	46.26	41.50	320.82
YIL043C	CBR1	0.95	1.58	1.71	2.11	2.20	2.19	3.32	3.07	17.99	4.77	21.30	7.84	284.13
YIL044C	AGE2	0.97	1.52	1.59	2.02	2.16	2.26	3.92	3.13	28.70	13.67	32.61	16.80	300.17
YIL045W	PIG2	0.99	1.47	1.55	1.92	2.19	2.18	6.86	3.84	42.85	24.77	49.71	28.62	288.98
YIL046W-A	YIL046w-a	0.91	1.17	1.26	1.59	1.80	1.96	7.39	0.99	52.71	14.71	60.10	15.70	291.82
YIL047C	SYG1	0.87	1.23	1.41	1.80	1.97	2.07	16.97	9.53	56.80	43.27	73.77	52.80	344.66
YIL049W	DFG10	0.95	1.50	1.64	2.04	2.18	2.28	3.45	3.04	21.58	8.33	25.03	11.37	291.24
YIL050W	PCL7	0.96	1.47	1.55	1.96	2.11	2.22	3.28	3.02	21.04	11.43	24.32	14.45	280.99
YIL052C	RPL34b	0.88	1.21	1.34	1.76	1.96	2.11	3.67	3.10	23.08	15.62	26.75	18.72	300.45
YIL053W	RHR2	0.95	1.44	1.56	1.95	2.11	2.23	2.97	2.87	17.33	9.04	20.30	11.92	276.79
YIL054W	YIL054w	0.86	1.18	1.33	1.75	1.94	2.05	9.44	5.47	45.84	30.61	55.28	36.08	304.51
YIL055C	YIL055c	0.90	1.26	1.46	1.84	1.99	2.13	4.49	3.61	26.45	15.83	30.94	19.44	286.28
YIL056W	VHR1	0.94	1.13	1.29	1.70	1.92	2.11	4.08	1.36	33.02	16.27	37.10	17.64	301.78
YIL057C	YIL057c	1.03	1.60	1.74	2.09	2.20	2.29	2.58	2.93	8.20	5.59	10.78	8.52	264.39
YIL058W	YIL058w	0.97	1.14	1.33	1.83	2.02	2.19	7.67	0.86	48.88	8.98	56.54	9.85	273.85
YIL059C	YIL059c	0.89	1.24	1.40	1.78	1.96	2.10	9.18	4.35	44.21	25.99	53.40	30.33	307.83
YIL060W	YIL060w	0.86	1.21	1.38	1.75	1.95	2.06	18.68	12.06	60.57	49.32	79.25	61.38	353.20
YIL064W	SEE1	0.94	1.45	1.56	1.96	2.10	2.22	2.98	2.50	19.51	8.63	22.49	11.13	280.82
YIL065C	FIS1	0.93	1.34	1.44	1.86	2.05	2.17	3.88	2.26	30.46	11.26	34.34	13.53	294.75
YIL066C	RNR3	0.98	1.16	1.34	1.74	2.00	2.17	1.22	0.83	7.39	2.83	8.61	3.66	246.49
YIL067C	YIL067c	0.89	1.32	1.53	1.89	2.05	2.17	8.76	6.63	43.34	35.11	52.10	41.74	309.56
YIL069C	RPS24b	0.84	1.16	1.22	1.57	1.78	1.96	3.59	1.04	40.25	4.63	43.83	5.66	308.76
YIL070C	MAM33	0.89	1.28	1.40	1.71	1.91	2.04	14.71	9.33	51.11	41.79	65.82	51.12	356.82
YIL071C	PCI8	0.92	1.29	1.46	1.85	2.02	2.14	18.68	13.85	58.48	54.64	77.16	68.49	343.92
YIL072W	HOP1	0.92	1.34	1.53	1.93	2.10	2.17	5.18	3.27	35.38	19.87	40.56	23.14	289.36
YIL073C	SPO22	0.98	1.45	1.56	1.98	2.15	2.26	4.80	3.05	29.03	10.72	33.82	13.78	291.06

ORF.name	Strain	Optical density at 600 nm at regular intervals (h)						GLUCOSE		FRUCTOSE		TOTAL SUGARS (g/l)		TOTAL AMINO ACIDS (mg/L)
		0	26	33	48	59	78	102 h	118 h	102 h	118 h	102 h	118 h	102 h
YIL074C	SER33	0.89	1.24	1.36	1.71	1.86	2.01	11.70	11.29	51.44	48.22	63.14	59.52	297.19
YIL076W	SEC28	0.87	1.15	1.24	1.66	1.87	1.98	10.39	6.28	50.52	38.22	60.91	44.50	309.37
YIL077C	YIL077c	0.92	1.33	1.51	1.90	2.09	2.21	5.07	3.20	31.50	19.51	36.57	22.72	300.21
YIL079C	AIR1	0.86	1.22	1.39	1.76	1.92	2.05	3.34	2.92	20.46	12.61	23.80	15.53	272.95
YIL084C	SDS3	0.86	1.25	1.46	1.82	1.98	2.08	3.62	3.24	22.72	21.47	26.34	24.71	270.01
YIL085C	KTR7	0.92	1.16	1.32	1.75	1.97	2.12	4.32	1.56	37.41	21.38	41.73	22.94	299.27
YIL086C	YIL086c	0.87	1.25	1.43	1.81	1.98	2.08	4.17	4.16	27.44	25.17	31.60	29.32	282.30
YIL087C	AIM19	0.91	1.27	1.42	1.80	1.96	2.08	6.84	11.02	40.07	47.82	46.91	58.84	304.24
YIL088C	AVT7	0.88	1.24	1.37	1.74	1.95	2.06	4.73	3.86	31.36	22.66	36.09	26.52	307.04
YIL089W	YIL089w	0.91	1.29	1.45	1.85	2.03	2.17	4.68	5.17	30.35	28.19	35.03	33.36	310.40
YIL090W	ICE2	0.86	1.18	1.28	1.82	1.79	1.92	15.65	9.35	60.59	49.22	76.23	58.57	337.12
YIL092W	YIL092w	0.91	1.26	1.38	1.73	1.94	2.08	9.86	5.71	46.68	33.09	56.54	38.79	335.57
YIL092W	YIL092w	0.89	1.04	1.19	1.64	1.84	2.02	3.87	1.04	36.14	15.44	40.01	16.48	253.63
YIL093C	RSM25	0.88	1.28	1.49	1.86	2.02	2.12	6.10	4.86	35.03	27.68	41.13	32.54	294.30
YIL094C	LYS12	0.93	1.24	1.46	1.82	2.01	2.15	0.60	0.57	1.33	0.61	1.93	1.18	298.64
YIL095W	PRK1	0.86	1.18	1.31	1.68	1.85	1.95	17.41	10.13	57.51	46.60	74.92	56.73	341.10
YIL096C	YIL096c	0.88	1.23	1.41	1.83	1.99	2.12	11.01	4.46	47.96	27.04	58.97	31.51	327.93
YIL097W	FYV10	0.97	1.33	1.50	1.94	2.08	2.23	7.10	3.71	41.42	22.21	48.53	25.92	309.59
YIL098C	FMC1	0.96	1.20	1.43	1.86	2.05	2.21	1.35	0.59	16.27	1.17	17.62	1.75	281.87
YIL099W	SGA1	0.90	1.23	1.40	1.73	1.93	2.08	8.02	1.82	50.82	26.49	58.85	28.31	307.28
YIL100W	YIL100w	0.89	1.22	1.37	1.61	1.79	1.92	27.45	10.98	77.70	56.61	105.14	67.59	316.65
YIL101C	XBP1	0.84	1.16	1.30	1.62	1.82	1.99	0.92	0.67	17.46	5.72	18.38	6.39	361.04
YIL102C	YIL102c	1.01	1.29	1.50	1.92	2.10	2.25	10.30	1.46	51.22	16.94	61.52	18.40	304.19
YIL103W	DPH1	0.92	1.21	1.29	1.51	1.74	1.92	14.19	3.47	61.04	36.88	75.22	40.35	323.09
YIL105C	SLM1	0.92	1.24	1.39	1.77	1.97	2.13	15.54	4.22	64.83	39.25	80.37	43.48	273.78
YIL107C	PFK26	0.93	1.28	1.43	1.73	1.91	2.06	8.67	1.38	54.58	24.10	63.24	25.48	324.87
YIL108W	YIL108w	0.91	1.20	1.31	1.70	1.92	2.10	13.04	3.30	61.22	37.11	74.26	40.41	343.38
YIL110W	MNI1	0.89	1.19	1.29	1.70	1.93	2.13	5.84	1.05	48.06	19.21	53.89	20.25	323.40
YIL111W	COX5b	0.95	1.29	1.54	1.91	2.06	2.23	7.22	0.80	43.64	3.54	50.87	4.34	308.62
YIL112W	HOS4	0.96	0.95	0.96	1.01	1.09	1.03	136.70	122.58	141.96	130.99	278.66	253.58	187.08
YIL113W	SDP1	1.00	1.13	1.29	1.89	2.11	2.28	5.57	7.06	47.24	51.05	52.81	58.10	161.36
YIL114C	POR2	1.06	1.22	1.42	1.99	2.15	2.32	9.20	10.36	61.08	59.81	70.28	70.17	188.48
YIL116W	HIS5	0.84	1.09	1.05	0.93	0.95	0.86	123.52	124.45	122.57	123.63	246.09	248.07	530.06
YIL117C	PRM5	0.99	1.13	1.31	1.88	2.09	2.24	12.08	7.06	65.86	51.29	77.94	58.34	207.74
YIL119C	RPI1	0.99	1.18	1.41	1.94	2.13	2.31	0.60	0.39	2.48	0.50	3.08	0.89	218.05
YIL120W	QDR1	0.90	1.02	1.23	1.81	2.03	2.19	10.42	0.58	59.78	7.47	70.20	8.05	184.06
YIL121W	QDR2	0.92	1.14	1.43	1.92	2.11	2.23	12.05	4.77	59.57	37.29	71.62	42.06	165.67
YIL122W	POG1	0.94	1.21	1.44	1.81	1.98	2.14	16.35	1.07	59.03	13.06	75.39	14.13	304.98
YIL123W	SIM1	0.99	1.16	1.38	1.88	2.08	2.24	20.85	9.95	73.79	51.71	94.64	61.66	147.93
YIL124W	AYR1	0.99	1.15	1.35	1.82	2.03	2.20	13.51	4.66	62.59	40.20	76.10	44.86	140.01
YIL125W	KGD1	0.94	1.12	1.38	1.97	2.30	2.26	9.48	2.97	52.37	31.68	61.85	34.65	134.30
YIL127C	RRT14	0.87	1.14	1.33	1.75	1.95	2.06	5.51	0.85	45.45	9.52	50.96	10.37	284.44
YIL128W	MET18	0.94	1.03	1.18	1.73	1.93	2.15	17.22	3.46	68.99	36.86	86.22	40.32	114.36
YIL130W	ASG1	0.95	0.95	0.96	1.00	1.05	1.02	86.14	138.02	121.42	142.00	207.55	280.02	228.80
YIL131C	FKH1	0.96	1.19	1.41	1.83	2.03	2.18	11.05	3.35	52.68	28.77	63.74	32.13	300.41
YIL132C	CSM2	1.03	1.17	1.34	1.87	2.14	2.36	2.07	0.70	4.13	4.49	6.20	5.19	231.90
YIL133C	RPL16a	0.92	0.97	1.11	1.70	1.94	2.15	2.41	2.95	30.89	31.75	33.30	34.70	257.22
YIL134C-A	YIL134c-a	0.91	1.29	1.43	1.74	1.89	2.01	20.70	2.69	77.17	26.60	97.87	29.29	328.34
YIL134W	FLX1	1.04	1.13	1.29	1.84	2.06	2.23	3.66	3.65	40.40	36.48	44.06	40.13	262.68
YIL135C	VHS2	1.02	1.10	1.29	1.57	1.69	2.00	0.85	1.15	12.45	9.29	13.30	10.44	253.80
YIL136W	OM45	0.93	1.24	1.50	1.91	2.10	2.24	3.62	0.95	30.38	9.87	34.01	10.82	296.06
YIL137C	TMA108	0.98	1.17	1.33	1.75	1.92	2.12	3.00	0.73	35.90	6.05	38.90	6.78	242.74
YIL138C	TPM2	0.94	1.03	1.22	2.01	1.95	2.01	19.38	1.61	70.73	24.02	90.11	25.63	192.30
YIL139C	REV7	0.96	1.12	1.33	1.87	2.04	2.20	23.30	10.45	73.21	55.04	96.51	65.49	213.20
YIL140W	AXL2	1.00	1.12	1.31	1.86	2.05	2.20	31.39	15.86	86.02	66.47	117.41	82.33	184.55
YIL141W	YIL141w	0.96	1.06	1.23	1.78	2.01	2.18	31.73	13.59	88.22	66.27	119.95	79.86	246.05
YIL145C	PAN6	0.90	0.97	1.13	1.62	1.84	2.03	26.65	12.57	82.69	59.16	109.34	71.73	239.83
YIL145C	PAN6	0.91	1.35	1.52	1.89	2.07	2.20	3.00	2.12	34.94	22.84	37.94	24.97	289.60
YIL146C	ATG32	0.92	1.03	1.23	1.79	1.99	2.16	15.14	5.65	67.14	44.84	82.28	50.49	201.32
YIL148W	RPL40a	1.02	1.08	1.17	1.79	2.23	2.20	12.07	10.16	61.98	58.09	74.05	68.25	225.22
YIL149C	MLP2	0.98	1.10	1.29	1.86	2.08	2.21	7.84	6.48	53.91	49.95	61.75	56.43	249.58
YIL152W	YIL152w	1.00	1.12	1.29	1.83	2.02	2.19	9.40	7.43	62.48	51.71	71.88	59.14	228.73
YIL153W	RRD1	0.93	1.63	1.85	2.11	2.23	2.33	11.94	6.54	62.56	43.33	74.51	49.86	320.19
YIL154C	IMP2'	1.08	1.32	1.56	2.07	2.21	2.36	2.10	2.03	28.52	26.50	30.62	28.53	235.85
YIL155C	GUT2	0.98	1.09	1.26	1.82	2.02	2.17	14.45	2.03	66.17	24.70	80.62	26.73	241.55
YIL156W	UBP7	0.94	1.09	1.29	1.83	2.02	2.18	23.11	1.19	80.55	18.07	103.65	19.25	214.82
YIL157C	COA1	1.00	1.25	1.50	1.98	2.13	2.27	10.34	0.65	54.90	5.59	65.24	6.24	197.20
YIL158W	AIM20	0.95	1.21	1.43	1.85	2.02	2.15	14.99	3.33	59.10	32.10	74.09	35.44	305.74
YIL159W	BNR1	0.91	1.05	1.27	1.78	1.98	2.15	7.53	1.17	48.14	17.90	55.67	19.06	230.00
YIL160C	POT1	0.92	1.05	1.24	1.73	1.92	2.09	6.17	0.99	49.45	15.81	55.62	16.80	242.02
YIL161W	YIL161w	0.93	1.07	1.28	1.79	1.99	2.17	5.99	1.09	50.47	17.19	56.46	18.28	244.33
YIL162W	SUC2	0.92	1.12	1.34	1.86	2.07	2.22	6.97	1.33	50.20	21.10	57.17	22.43	243.56
YIL163C	YIL163c	0.96	1.00	1.10	1.71	2.04	2.41	8.89	6.37	57.21	53.32	66.11	59.69	240.40
YIL164C	NIT1	0.98	1.09	1.26	1.92	2.14	2.32	7.38	5.29	54.25	46.72	61.64	52.01	249.39
YIL165C	YIL165c	1.02	1.23	1.49	2.06	2.23	2.35	1.15	1.76	18.02	22.69	19.18	24.45	227.14
YIL166C	YIL166c	0.93	1.06	1.27	1.84	2.04	2.21	3.77	3.85	41.29	40.41	45.06	44.26	239.67
YIL167W	SDL1	0.94	1.08	1.27	1.80	1.99	2.19	6.14	2.77	51.02	36.04	57.16	38.81	206.81
YIL168W	YIL168w	0.99	1.16	1.36	1.89	2.07	2.23	10.43	0.99	61.53	15.82	71.96	16.82	265.21
YIL170W	HXT12	1.00	1.22	1.43	1.96	2.15	2.27	17.57	0.89	70.47	13.38	88.05	14.27	208.04
YIL173W	VTH1	0.99	1.15	1.36	1.90	2.06	2.21	27.99	4.51	87.49	42.67	115.48	47.18	233.54
YIR001C	SGN1	0.91	1.02	1.18	1.75	1.98	2.16	13.12	2.08	64.97	30.28	78.09	32.36	254.52
YIR002C	MPH1	0.95	1.07	1.25	1.78	1.98	2.17	16.75	5.49	68.37	46.39	85.13	51.89	257.36
YIR003W	AIM21	0.92	1.01	1.16	1.65	1.85	2.00	14.27	5.22	64.79	47.04	79.06	52.27	255.62
YIR004W	DJP1	0.93	1.13	1.30	1.71	1.90	2.05	14.29	4.35	59.44	34.35	73.73	38.69	312.41
YIR005W	IST3	0.98	0.99	1.01	1.18	1.47	1.84	42.23	17.57	100.95	74.83	143.17	92.40	289.99
YIR007W	YIR007w	1.01	1.10	1.24	1.84	2.10	2.29	6.95	4.71	48.45	44.31	55.41	49.01	243.70
YIR009W	MSL1	1.01	1.22	1.45	1.99	2.16	2.30	0.84	0.83	12.15	10.76	12.99	11.58	248.10
YIR013C	GAT4	0.97	1.09	1.27	1.80	1.98	2.17	6.48	4.56	53.39	42.51	59.87	47.07	262.44
YIR014W	YIR014w	1.03	1.19	1.39	1.93	2.10	2.25	4.99	2.95	43.01	27.90	47.99	30.85	278.19
YIR016W	YIR016w	1.02	1.27	1.52	2.03	2.18	2.30	9.79	1.01	60.13	17.57	69.92	18.58	282.96
YIR017C	MET28	0.93	1.38	1.59	1.99	2.14	2.22	15.66	7.47	59.51	38.69	75.17	46.16	352.64
YIR018C-A	YIR018c-a	0.87	1.10	1.20	1.47	1.66	1.80	6.76	1.30	51.28	14.99	58.04	16.29	290.28
YIR018W	YAP5	0.98	1.42	1.58	2.03	2.26	2.34	14.06	11.14	57.62	47.21	71.68	58.36	324.98
YIR019C	MUC1	0.98	1.46	1.67	2.00	2.13	2.21	24.37	15.10	71.67	56.97	96.04	72.07	344.20
YIR020C	YIR020c	1.00	1.52	1.69	2.24	2.15	2.10	13.49	6.15	50.76	33.14	64.24	39.29	332.46
YIR020W-B	Unknown	0.97	1.43	1.60	1.98	2.13	2.24	12.36	5.82	50.96	32.54	63.32	38.36	331.29
YIR021W	MRS1	0.90	1.12	1.12	1.22	1.58	1.88	21.58	7.51	71.00	43.53	92.58	51.04	312.07
YIR021W-A	YIR021w-a	0.93	1.25	1.39	1.77	2.05	2.02	5.60	0.92	45.87	11.60	51.46	12.53	292.57
YIR023W	DAL81	0.94	1.02	1.12	1.59	1.81	2.01	24.38	18.90	81.90	80.98	106.28	99.88	375.34
YIR024C	YIR024c	0.97	1.50	1.72	2.06	2.18	2.28	12.48	9.33	52.70	42.16	65.18	51.48	325.48
YIR025W	MND2	0.95	1.42	1.60	1.99	2.12	2.24	12.35	5.94	52.05	34.95	64.40	40.89	331.99
YIR026C	YVH1	0.98	1.42	1.62	2.04	2.18	2.26	17.02	8.98	62.06	43.43	79.09	52.41	331.54
YIR027C	DAL1	0.91	1.31	1.46	1.90	2.07	2.22	10.64	3.73	48.06	20.09	58.70	23.83	326.65
YIR028W	DAL4	0.94	1.32	1.47	1.94	2.09	2.21	14.38	4.30	58.29	26.21	72.66	30.51	324.66
YIR029W	DAL2	0.95	1.32	1.54	1.91	1.88	2.00	14.68	10.06	59.35	45.89	74.03	55.95	340.77
YIR030C	DCG1	0.88	0.96	1.08	1.60	1.83	2.04	6.25	3.22	46.24	35.97	52.49	39.19	288.03
YIR031C	DAL7	0.96	1.44	1.66	2.02	2.15	2.24	18.70	11.40	61.85	51.01	80.55	62.41	346.42
YIR032C	DAL3	0.90	0.99	1.11	1.67	1.91	2.12	4.16	2.69	44.43	33.27	48.59	35.96	297.23
YIR033W	MGA2	0.96	1.44	1.66	2.04	2.18	2.28	13.18	7.31	54.22	39.41	67.40	46.71	316.99
YIR034C	LYS1	0.91	1.19	1.16	1.02	1.02	1.00	129.93	125.87	149.23	142.85	279.16	268.72	525.36
YIR035C	YIR035c	0.96	1.45	1.61	1.95	2.10	2.04	13.20	6.80	50.94	35.55	64.14	42.35	324.95
YIR036C	IRC24	1.00	1.44	1.60	2.00	2.14	2.25	9.51	8.10	45.17	40.97	54.68	49.07	309.01
YIR037W	HYR1	0.97	1.45	1.62	1.96	2.10	2.21	14.27	6.56	59.12	36.04	73.39	42.60	338.93
YIR038C	GTT1	0.98	1.47	1.70	2.04	2.17	2.27	12.54	7.05	52.73	36.16	65.27	43.22	328.98
YIR039C	YPS6	0.96	1.43	1.63	2.00	2.15	2.24	15.41	7.35	54.78	38.17	70.20	45.52	341.43
YIR042C	YIR042c	0.94	1.39	1.57	1.94	2.07	2.17	12.91	5.26	52.92	30.27	65.83	35.53	333.99
YIR043C	YIR043c	0.89	1.09	1.25	1.65	1.89	2.00	4.81	3.44	46.08	32.48	50.89	35.93	308.99
YIR044C	YIR044c	0.89	1.04	1.20	1.68	1.91	2.08	11.51	4.11	63.83	40.12	75.33	44.22	306.06
YJL003W	COX16	0.93	1.15	1.34	1.80	2.00	2.11	8.15	0.68	54.16	7.68	62.31	8.36	295.93
YJL004C	SYS1	0.91	1.09	1.23	1.57	1.86	2.06	1.16	0.77	20.14	1.79	21.30	2.55	293.16
YJL006C	CTK2	0.93	1.01	1.08	1.10	1.35	1.53	50.26	38.16	109.43	77.26	159.69	115.42	350.54
YJL007C	YJL007c	0.87	1.20	1.33	1.69	1.88	2.01	9.02	3.70	57.48	45.01	66.50	48.71	302.53
YJL012C	VTC4	0.94	1.16	1.39	1.78	2.01	2.16	1.36	0.90	15.89	6.23	17.24	7.13	258.49
YJL012C	VTC4	0.91	1.29	1.49	1.84	2.00	2.16	7.95	1.39	52.06	16.71	60.01	18.10	294.84
YJL012C-A	YJL012c-a	0.96	1.25	1.42	1.74	1.93	2.07	7.02	1.36	51.33	17.77	58.35	19.13	295.22
YJL013C	MAD3	0.97	1.30	1.62	2.00	2.19	2.30	1.25	0.85	0.02	0.45	1.27	1.29	233.49
YJL016W	YJL016w	0.95	1.23	1.39	1.80	2.05	2.28	0.87	0.70	3.81	1.01	4.68	1.71	232.20
YJL016W	YJL016w	0.99	1.47	1.69	2.08	2.23	2.30	3.15	0.84	38.51	11.25	41.66	12.09	228.45
YJL017W	YJL017w	0.91	1.30	1.48	1.89	2.08	2.18	4.97	2.88	47.54	37.34	52.51	40.22	252.84
YJL020C	BBC1	0.96	1.42	1.61	1.97	2.14	2.25	0.63	0.71	14.50	8.42	15.13	9.13	259.98
YJL020C	BBC1	0.91	1.40	1.56	1.84	2.02	2.15	6.30	1.33	48.46	15.86	54.76	17.19	292.07
YJL021C	YJL021C	0.95	1.42	1.60	1.97	2.13	2.24	4.81	0.94	47.63	18.05	52.45	18.99	271.04
YJL022W	YJL022w	0.93	1.34	1.50	1.89	2.06	2.16	8.15	0.76	58.57	7.99	66.71	8.75	269.92
YJL023C	PET130	0.91	1.11	1.12	0.98	0.98	0.98	67.34	43.77	123.18	102.20	190.51	145.96	297.51

ORF.name	Strain	Optical density at 600 nm at regular intervals (h)						GLUCOSE		FRUCTOSE		TOTAL SUGARS (g/l)		TOTAL AMINO ACIDS (mg/L)
		0	26	33	48	59	78	102 h	118 h	102 h	118 h	102 h	118 h	102 h
YJL024C	APS3	0.90	1.27	1.40	1.76	1.93	2.03	21.28	1.04	81.39	22.09	102.67	23.13	299.67
YJL027C	YJL027c	0.88	0.95	0.97	0.88	0.88	0.84	131.68	122.18	156.50	114.09	288.18	236.28	412.15
YJL028W	YJL028w	0.86	1.02	1.18	1.59	1.81	1.97	4.96	1.07	46.77	14.85	51.73	15.92	288.49
YJL029C	VPS53	0.88	1.23	1.35	1.60	1.78	1.87	9.64	1.49	59.50	23.45	69.14	24.94	282.84
YJL030W	MAD2	1.04	1.68	1.85	2.15	2.24	2.32	5.00	8.24	32.58	42.27	37.58	50.51	282.42
YJL036W	SNX4	1.00	1.59	1.77	2.12	2.21	2.29	9.00	7.74	44.68	37.46	53.68	45.21	322.76
YJL037W	IRC18	1.01	1.59	1.76	2.08	2.20	2.30	9.89	5.97	48.60	31.13	58.50	37.11	321.02
YJL038C	LOH1	1.04	1.58	1.73	2.06	2.18	2.27	10.92	9.36	51.05	44.74	61.97	54.11	312.31
YJL042W	MHP1	0.97	1.30	1.60	2.03	2.16	2.27	3.11	1.01	33.80	12.66	36.90	13.67	309.69
YJL043W	YJL043w	0.93	1.31	1.46	1.93	2.12	2.23	6.60	3.50	39.91	21.56	46.51	25.06	292.27
YJL044C	GYP6	0.89	1.31	1.45	1.94	2.12	2.23	14.10	4.87	53.84	27.78	67.94	32.65	326.19
YJL045W	YJL045w	0.94	1.41	1.55	1.93	2.10	2.19	10.05	10.34	47.62	48.10	57.67	58.44	306.61
YJL046W	AIM22	0.94	1.46	1.58	2.00	2.22	2.20	13.99	9.17	50.62	41.75	64.61	50.93	327.14
YJL047C	RTT101	0.93	1.42	1.55	1.95	2.12	2.22	20.17	12.11	68.04	49.55	88.21	61.66	333.01
YJL047C-A	YJL047c-a	1.00	1.35	1.54	1.92	2.10	2.22	6.23	1.57	48.90	20.24	55.13	21.81	301.80
YJL048C	UBX6	0.94	1.48	1.67	2.05	2.18	2.28	3.11	3.85	12.29	20.04	15.40	23.89	271.07
YJL049W	YJL049w	0.99	1.51	1.69	2.10	2.25	2.32	3.91	7.44	24.31	38.93	28.22	46.37	277.08
YJL051W	IRC8	0.99	1.56	1.74	2.11	2.22	2.30	7.88	4.97	44.11	28.56	51.99	33.52	297.59
YJL052W	TDH1	0.98	1.55	1.76	2.15	2.26	2.34	4.04	6.72	25.27	34.08	29.30	40.80	294.04
YJL053W	PEP8	0.98	1.49	1.63	1.92	2.05	2.14	12.30	10.17	54.77	46.77	67.07	56.94	342.46
YJL055W	YJL055w	1.03	1.58	1.75	2.08	2.18	2.30	5.20	3.27	32.00	15.21	37.20	18.48	293.08
YJL056C	ZAP1	1.00	1.36	1.33	1.39	1.51	1.69	56.33	35.89	103.33	84.56	159.67	120.46	348.73
YJL057C	IKS1	0.96	1.25	1.37	1.86	2.07	2.22	19.02	12.19	59.13	49.26	78.15	61.45	348.12
YJL058C	BIT61	0.87	1.27	1.39	1.78	1.96	2.12	13.66	9.00	52.92	42.13	66.58	51.13	336.02
YJL059W	YHC3	0.93	1.38	1.58	1.98	2.14	2.25	14.46	9.66	54.28	42.19	68.74	51.86	340.79
YJL059W	YHC3	0.99	1.28	1.41	1.75	1.95	2.10	14.42	1.23	61.26	13.82	75.68	15.05	323.16
YJL060W	BNA3	0.94	1.37	1.55	1.96	2.11	2.23	4.71	3.76	31.06	21.57	35.77	25.33	313.40
YJL062W	LAS21	1.00	1.48	1.69	2.06	2.21	2.29	3.34	3.08	14.71	7.69	18.05	10.78	277.13
YJL062W-A	RRG10	0.95	1.06	1.07	0.92	0.91	0.90	120.41	125.11	137.40	105.07	257.80	230.18	488.23
YJL063C	MRPL8	0.98	1.20	1.17	1.08	1.09	1.04	101.20	99.92	108.51	105.35	209.70	205.27	529.95
YJL064W	YJL064w	0.98	1.50	1.72	2.01	2.15	2.24	11.29	16.41	48.93	56.33	60.22	72.74	305.82
YJL065C	DLS1	0.95	1.34	1.49	1.84	2.01	2.14	12.96	16.61	54.64	57.04	67.60	73.65	316.32
YJL066C	MPM1	0.97	1.30	1.48	1.80	1.99	2.10	6.17	11.16	39.73	47.33	45.90	58.49	304.51
YJL067W	YJL067w	0.99	1.42	1.58	1.92	2.10	2.21	8.49	9.17	44.34	42.94	52.82	52.11	311.78
YJL068C	YJL068c	0.95	1.32	1.53	1.87	2.04	2.13	21.07	15.72	60.55	53.33	81.62	69.06	369.49
YJL070C	YJL070c	0.93	1.15	1.38	1.81	2.01	2.15	3.57	5.39	37.31	42.02	40.88	47.41	253.44
YJL071W	ARG2	0.92	1.28	1.38	1.64	1.85	2.10	1.17	1.21	4.00	1.74	5.17	2.95	260.36
YJL073W	JEM1	1.00	1.39	1.55	1.93	2.09	2.22	14.94	9.32	54.61	42.16	69.55	51.47	336.81
YJL075C	YJL075c	0.95	1.19	1.40	1.88	2.09	2.23	4.33	0.69	44.85	2.46	49.18	3.15	293.64
YJL077C	ICS3	0.96	1.49	1.65	2.06	2.21	2.32	13.20	9.74	54.28	42.59	67.48	52.33	333.06
YJL077W-B	YJL077w-b	0.94	1.28	1.47	1.93	2.14	2.23	9.66	3.50	56.92	27.32	66.58	30.82	303.77
YJL078C	PRY3	0.99	1.28	1.54	1.96	2.14	2.27	1.43	4.80	25.11	39.95	26.53	44.74	287.39
YJL079C	PRY1	1.00	1.50	1.69	2.03	2.17	2.26	10.78	4.85	49.26	27.71	60.04	32.56	321.83
YJL080C	SCP160	0.99	1.34	1.43	1.73	1.90	2.05	21.78	13.71	65.86	52.55	87.64	66.26	298.30
YJL082W	IML2	0.94	1.34	1.46	1.76	1.94	2.12	5.22	3.15	28.32	10.41	33.54	13.55	296.95
YJL083W	TAX4	0.97	1.33	1.47	1.79	1.96	2.11	5.57	5.46	34.49	32.49	40.06	37.95	304.46
YJL084C	ALY2	0.96	1.44	1.65	1.97	2.12	2.22	10.20	7.75	48.31	40.02	58.52	47.78	327.76
YJL088W	ARG3	0.85	1.15	1.27	1.65	1.86	2.02	5.85	1.32	46.41	15.67	52.26	16.99	286.49
YJL088W	ARG3	0.89	1.24	1.28	1.61	1.88	2.10	4.47	1.36	45.50	11.78	49.97	13.15	300.58
YJL089W	SIP4	0.99	1.47	1.65	1.98	2.14	2.23	15.51	9.28	57.09	43.18	72.60	52.46	343.98
YJL092W	SRS2	0.92	1.24	1.38	1.62	1.79	1.91	19.36	14.25	59.75	53.33	79.11	67.58	356.34
YJL093C	TOK1	0.98	1.39	1.63	1.98	2.14	2.21	22.33	14.63	59.99	51.48	82.32	66.11	363.85
YJL094C	KHA1	0.93	1.17	1.39	1.83	2.03	2.17	0.81	1.38	5.47	19.83	6.27	21.21	253.59
YJL095W	BCK1	1.02	1.33	1.40	1.89	2.10	2.27	26.18	16.18	69.72	58.84	95.89	75.02	334.92
YJL096W	MRPL49	0.96	1.18	1.14	1.38	1.84	2.11	27.78	14.88	64.66	53.11	92.44	67.98	337.35
YJL096W	MRPL49	0.99	1.15	1.17	1.05	1.05	1.04	121.61	117.17	137.96	101.96	259.57	219.13	505.61
YJL098W	SAP185	0.97	1.46	1.65	2.03	2.17	2.27	15.61	5.42	56.33	31.35	71.94	36.77	345.35
YJL099W	CHS6	0.98	1.41	1.53	1.83	1.99	2.12	15.65	7.68	54.40	37.85	70.05	45.54	337.26
YJL100W	LSB6	0.93	1.34	1.45	1.79	1.96	2.11	12.03	5.79	51.86	32.91	63.89	38.70	330.15
YJL101C	GSH1	0.90	1.14	1.25	1.58	1.77	1.89	8.52	2.95	46.07	27.56	54.60	30.51	309.53
YJL101C	GSH1	0.87	1.18	1.28	1.63	1.85	2.02	8.23	1.84	48.98	19.56	57.21	21.40	295.67
YJL102W		0.95	1.27	1.38	1.89	2.08	2.18	11.46	4.44	49.59	28.66	61.04	33.10	289.89
YJL102W	MEF2	0.96	1.15	1.14	1.01	1.03	0.99	122.89	123.95	133.51	135.09	256.41	259.03	541.72
YJL103C	GSM1	0.96	1.31	1.56	1.93	2.08	2.17	15.47	2.50	52.48	24.57	67.94	27.07	328.83
YJL105W	SET4	0.88	1.02	1.16	1.48	1.70	1.89	1.64	2.58	25.71	28.52	27.35	31.10	294.86
YJL106W	IME2	0.94	1.28	1.45	1.80	1.98	2.15	4.81	3.37	31.50	17.98	36.30	21.34	307.27
YJL107C	YJL107c	0.87	1.19	1.32	1.59	1.75	1.91	10.54	7.21	48.80	40.14	59.35	47.35	324.31
YJL108C	PRM10	0.97	1.37	1.51	1.76	1.93	2.07	13.95	6.45	54.01	36.53	67.96	42.98	331.32
YJL110C	GZF3	1.00	1.48	1.75	2.08	2.21	2.30	12.78	6.44	51.53	36.62	64.30	43.06	344.01
YJL112W	MDV1	0.96	1.36	1.58	1.90	2.06	2.17	18.52	10.83	60.90	45.76	79.42	56.59	348.35
YJL115W	ASF1	0.95	1.25	1.26	1.35	1.57	1.79	40.36	23.28	92.50	87.21	132.86	110.49	370.54
YJL116C	NCA3	0.97	1.37	1.47	1.88	2.06	2.20	15.81	8.32	55.10	41.26	70.90	49.58	330.10
YJL117W	PHO86	0.93	1.37	1.56	1.98	2.14	2.27	15.89	5.18	52.99	28.87	68.88	34.06	342.82
YJL118W	YJL118w	0.97	1.46	1.66	2.02	2.16	2.26	19.38	7.36	58.25	36.34	77.63	43.70	362.59
YJL119C	YJL119c	0.91	1.30	1.42	1.79	1.98	2.14	15.37	6.07	56.21	34.68	71.58	40.74	340.43
YJL120W	YJL120w	0.97	1.32	1.42	1.90	2.13	2.28	20.08	14.78	64.16	57.78	84.24	72.57	342.72
YJL121C	RPE1	0.93	1.24	1.30	1.63	1.87	2.07	21.60	13.15	61.66	51.38	83.26	64.52	356.48
YJL122W	ALB1	0.96	1.29	1.44	1.77	1.94	2.09	12.60	6.65	53.27	34.55	65.86	41.20	330.29
YJL123C	MTC1	0.89	1.26	1.44	1.85	2.02	2.16	9.40	4.66	43.75	27.80	53.14	32.46	319.15
YJL124C	LSM1	0.98	1.28	1.34	1.55	1.74	1.88	51.58	42.80	87.63	86.10	139.21	128.90	380.77
YJL126W	NIT2	0.97	1.36	1.55	1.84	2.01	2.13	16.61	7.04	57.67	39.57	74.28	46.61	310.50
YJL127C	SPT10	0.94	1.28	1.31	1.44	1.64	1.75	56.91	45.65	108.38	107.52	165.30	153.17	348.34
YJL127C-B	YJL127c-b	0.90	1.20	1.37	1.74	1.95	2.08	13.34	5.23	65.09	29.66	78.39	34.89	317.88
YJL128C	PBS2	0.93	1.00	1.03	1.04	1.11	1.18	103.27	110.54	125.21	127.03	228.48	237.57	370.48
YJL129C	TRK1	1.02	1.34	1.53	1.99	2.12	2.27	7.46	4.31	48.47	38.59	55.93	42.90	333.92
YJL129C	TRK1	0.91	1.11	1.30	1.75	1.96	2.12	1.97	0.99	23.84	11.42	25.80	12.41	313.25
YJL130C	URA2	1.03	1.12	1.09	1.18	1.23	1.31	119.69	111.30	129.34	121.56	249.04	232.86	527.38
YJL130C	URA2	0.92	1.17	1.18	1.05	1.09	1.06	123.34	135.45	131.27	136.63	254.61	272.07	521.67
YJL131C	AIM23	1.06	1.36	1.57	2.04	2.18	2.30	8.29	3.46	50.18	34.39	58.47	37.86	309.01
YJL132W	YJL132w	0.97	1.15	1.28	1.82	2.01	2.18	7.10	1.71	49.55	23.86	56.65	25.58	299.09
YJL132W	YJL132w	0.96	1.16	1.39	1.89	2.07	2.22	6.89	2.73	47.31	27.04	54.20	29.77	296.86
YJL133W	MRS3	0.98	1.34	1.54	1.98	2.14	2.30	1.48	1.08	19.12	5.26	20.60	6.34	279.97
YJL134W	LCB3	0.99	1.25	1.36	1.72	1.85	2.03	16.68	4.71	63.42	37.84	80.11	42.55	336.81
YJL135W	YJL135w	0.99	1.31	1.48	1.93	2.08	2.25	14.30	5.46	62.95	41.30	77.25	46.76	329.31
YJL136C	RPS21b	0.92	1.07	1.23	1.67	1.89	2.09	0.81	0.49	13.89	3.21	14.70	3.70	284.82
YJL136W-A	YJL136w-a	0.97	1.32	1.48	1.87	2.06	2.15	9.36	1.13	58.12	14.36	67.49	15.48	303.23
YJL137C	GLG2	0.97	1.20	1.43	1.88	2.06	2.21	7.24	3.45	50.23	34.84	57.47	38.29	305.73
YJL138C	TIF2	0.97	1.26	1.45	1.90	2.06	2.25	1.31	1.36	16.75	14.08	18.06	15.44	276.32
YJL139C	YUR1	0.91	1.09	1.22	1.62	1.76	1.97	3.67	2.23	33.69	24.93	37.36	27.15	293.15
YJL139C	YUR1	0.93	1.10	1.30	1.78	1.99	2.13	7.75	2.44	49.95	30.58	57.70	33.02	309.88
YJL140W	RPB4	1.01	1.37	1.58	1.97	2.09	2.24	4.43	1.74	39.58	19.99	44.01	21.73	303.02
YJL140W	RPB4	0.90	1.08	1.06	1.05	1.21	1.41	73.23	62.01	128.97	94.68	202.20	156.69	435.28
YJL141C	YAK1	0.92	1.13	1.35	1.85	2.05	2.23	2.89	0.76	20.87	5.65	23.76	6.41	281.77
YJL142C	YJL142c	0.98	1.22	1.44	1.96	2.10	2.28	6.43	2.07	45.31	23.82	51.74	25.89	296.80
YJL144W	YJL144w	1.02	1.39	1.60	2.52	2.50	2.32	1.23	1.11	11.30	4.86	12.52	5.97	284.53
YJL145W	SFH5	0.99	1.28	1.41	1.82	1.98	2.20	4.84	1.71	41.06	20.69	45.90	22.40	300.91
YJL146W	IDS2	1.02	1.29	1.44	1.89	2.04	2.20	2.51	1.08	30.34	8.09	32.85	9.17	299.30
YJL147C	YJL147c	1.09	1.34	1.50	1.98	2.13	2.28	5.69	1.57	44.13	19.67	49.83	21.24	302.07
YJL148W	RPA34	0.99	1.14	1.15	1.51	1.78	2.08	22.85	17.19	76.50	66.02	99.34	83.22	343.22
YJL149W	DAS1	0.95	1.20	1.33	1.78	1.82	1.96	5.61	1.92	42.37	21.16	47.98	23.09	310.42
YJL150W	YJL150w	1.02	1.28	1.44	1.92	2.08	2.25	7.74	1.46	49.16	18.56	56.90	20.03	311.45
YJL151C	SNA3	1.06	1.40	1.59	2.03	2.18	2.32	5.90	1.37	44.13	18.33	50.04	19.70	301.08
YJL151C	SNA3	0.92	1.10	1.32	1.80	1.98	2.14	9.91	1.49	53.22	22.23	63.13	23.72	316.93
YJL152W	YJL152w	1.02	1.31	1.46	1.90	2.03	2.21	5.10	1.46	41.55	17.44	46.65	18.91	303.62
YJL153C	INO1	0.99	1.16	1.25	1.66	1.84	2.09	4.09	1.38	43.11	19.14	47.21	20.52	306.67
YJL154C	VPS35	0.96	1.17	1.25	1.54	1.67	1.87	18.91	8.76	71.31	52.69	90.22	61.46	353.37
YJL155C	FBP26	1.07	1.39	1.57	1.98	2.12	2.31	1.57	1.09	19.76	10.20	21.32	11.30	283.70
YJL157C	FAR1	1.08	1.47	1.64	2.05	2.17	2.30	7.32	2.49	49.55	27.48	56.87	29.97	305.74
YJL158C	CIS3	1.08	1.47	1.63	2.09	2.22	2.35	3.86	1.89	38.19	23.29	42.04	25.18	293.35
YJL159W	HSP150	1.01	1.36	1.56	2.00	2.13	2.28	1.31	0.95	16.84	5.08	18.15	6.03	284.13
YJL160C	YJL160c	0.89	1.03	1.20	1.63	1.85	2.06	1.40	0.78	21.00	4.71	22.40	5.49	270.43
YJL160C	YJL160c	0.94	1.25	1.42	1.84	2.01	2.13	5.87	1.08	45.32	14.48	51.19	15.57	294.15
YJL161W	FMP33	1.01	1.23	1.37	1.85	2.02	2.19	7.38	2.70	48.26	29.68	55.63	32.38	304.60
YJL161W	FMP33	0.90	1.04	1.23	1.69	1.88	2.06	6.30	1.28	45.93	18.55	52.23	19.83	298.17
YJL162C	JJJ2	0.91	1.07	1.16	1.64	1.85	2.04	5.29	1.98	42.29	25.07	47.59	27.05	299.84
YJL163C	YJL163c	1.00	1.33	1.55	1.98	2.11	2.23	7.20	4.01	47.98	36.86	55.18	40.88	305.76
YJL163C	YJL163c	0.85	0.99	1.19	1.63	1.74	1.86	3.24	1.00	34.60	13.27	37.84	14.27	306.72
YJL164C	TPK1	1.02	1.23	1.32	1.63	1.77	1.93	20.76	9.57	71.70	52.26	92.45	61.83	351.20
YJL165C	HAL5	0.96	1.20	1.37	1.77	1.92	2.12	5.12	1.10	40.73	8.87	45.85	9.97	328.13
YJL165C	HAL5	0.90	1.09	1.29	1.70	1.85	2.00	8.96	3.85	51.47	34.47	60.43	38.32	332.79
YJL166W	QCR8	1.04	1.22	1.35	1.86	2.06	2.24	8.76	3.13	51.78	32.68	60.53	35.81	297.75
YJL168C	SET2	1.05	1.22	1.31	1.70	1.87	2.09	26.17	15.36	78.59	62.52	104.77	77.88	350.26
YJL169W	YJL169w	0.98	1.11	1.18	1.51	1.70	1.97	18.34	10.97	68.91	56.50	87.25	67.47	331.61
YJL170C	ASG7	0.97	1.15	1.28	1.72	1.91	2.14	1.28	1.18	13.82	4.36	15.10	5.54	282.98

ORF.name	Strain	Optical density at 600 nm at regular intervals (h)						GLUCOSE		FRUCTOSE		TOTAL SUGARS (g/l)		TOTAL AMINO ACIDS (mg/L)
		0	26	33	48	59	78	102 h	118 h	102 h	118 h	102 h	118 h	102 h
YJL171C	*YJL171c*	1.04	1.42	1.64	2.10	2.24	2.41	**1.22**	**1.25**	**13.39**	**7.35**	**14.61**	**8.59**	**282.04**
YJL172W	*CPS1*	1.02	1.42	1.64	2.08	2.19	2.33	**3.40**	**1.41**	**34.93**	**14.25**	**38.33**	**15.66**	**292.21**
YJL172W	*CPS1*	0.88	1.13	1.23	1.65	1.90	2.08	**8.14**	**2.17**	**51.48**	**24.94**	**59.62**	**27.10**	**316.40**
YJL175W	*YJL175w*	0.93	1.11	1.29	1.71	1.90	2.07	**8.44**	**1.88**	**54.42**	**29.94**	**62.86**	**31.83**	**376.58**
YJL175W	*YJL175w*	0.97	1.33	1.51	2.00	2.04	2.12	**2.59**	**2.42**	**35.53**	**27.68**	**38.12**	**30.10**	**342.55**
YJL176C	*SWI3*	1.02	1.13	1.18	1.48	1.59	1.72	**21.71**	**10.87**	**80.39**	**64.04**	**102.10**	**74.91**	**412.64**
YJL177W	*RPL17b*	0.87	0.95	1.07	1.55	1.78	1.99	**1.23**	**0.80**	**21.58**	**6.38**	**22.81**	**7.19**	**292.85**
YJL178C	*ATG27*	1.08	1.39	1.61	2.09	2.21	2.32	**16.34**	**8.92**	**65.49**	**54.10**	**81.83**	**63.02**	**306.57**
YJL179W	*PFD1*	0.97	1.12	1.20	1.61	1.88	1.92	**37.95**	**27.78**	**86.39**	**72.75**	**124.34**	**100.53**	**344.63**
YJL180C	*ATP12*	0.89	1.05	1.07	0.93	0.92	0.89	**130.67**	**121.09**	**133.38**	**131.34**	**264.05**	**252.43**	**520.91**
YJL181W	*YJL181w*	1.02	1.29	1.47	1.91	2.07	2.25	**6.73**	**1.22**	**47.61**	**13.91**	**54.34**	**15.13**	**315.89**
YJL182C	*YJL182c*	1.05	1.40	1.60	2.03	2.17	2.31	**10.63**	**6.70**	**55.50**	**45.74**	**66.13**	**52.44**	**318.81**
YJL183W	*MNN11*	0.96	1.15	1.31	1.73	1.90	2.14	**13.64**	**4.19**	**60.61**	**35.95**	**74.25**	**40.14**	**261.56**
YJL184W	*GON7*	0.83	1.08	1.06	1.03	1.20	1.41	**37.35**	**19.61**	**86.67**	**70.46**	**124.02**	**90.07**	**322.68**
YJL185C	*YJL185c*	1.02	1.41	1.62	2.03	2.16	2.30	**6.61**	**1.40**	**46.01**	**15.76**	**52.63**	**17.16**	**311.38**
YJL186W	*MNN5*	1.02	1.38	1.57	1.96	2.10	2.26	**7.00**	**3.09**	**49.35**	**31.08**	**56.34**	**34.16**	**311.38**
YJL187C	*SWE1*	1.04	1.34	1.52	1.93	2.08	2.27	**3.79**	**1.31**	**36.35**	**14.57**	**40.14**	**15.88**	**296.29**
YJL188C	*BUD19*	1.01	1.10	1.14	1.54	1.84	2.15	**39.36**	**22.89**	**93.96**	**74.08**	**133.33**	**96.98**	**347.78**
YJL189W	*RPL39*	1.02	1.38	1.61	2.06	2.19	2.33	**10.20**	**2.31**	**56.77**	**27.41**	**66.97**	**29.72**	**309.26**
YJL189W	*RPL39*	0.88	1.10	1.11	1.11	1.33	1.68	**11.47**	**3.12**	**65.41**	**34.49**	**76.89**	**37.62**	**258.82**
YJL190C	*RPS22a*	0.96	1.22	1.42	1.90	2.05	2.24	**1.29**	**1.08**	**19.41**	**5.69**	**20.70**	**6.77**	**292.16**
YJL191W	*RPS14b*	1.02	1.27	1.43	1.97	2.12	2.24	**11.22**	**3.31**	**57.82**	**33.33**	**69.04**	**36.64**	**304.93**
YJL191W	*RPS14b*	0.97	1.14	1.32	1.81	2.01	2.19	**13.93**	**2.00**	**60.92**	**28.83**	**74.85**	**30.83**	**324.83**
YJL192C	*SOP4*	0.99	1.15	1.28	1.86	1.95	2.15	**5.57**	**1.81**	**44.65**	**23.79**	**50.22**	**25.61**	**300.45**
YJL193W	*YJL193w*	1.04	1.34	1.55	1.96	2.10	2.27	**5.60**	**2.24**	**45.10**	**28.48**	**50.70**	**30.71**	**301.79**
YJL196C	*ELO1*	1.03	1.35	1.56	1.99	2.14	2.29	**0.89**	**1.06**	**9.54**	**3.32**	**10.44**	**4.38**	**257.19**
YJL196C	*ELO1*	0.91	1.08	1.26	1.68	1.87	2.04	**7.60**	**1.73**	**50.30**	**25.29**	**57.90**	**27.02**	**300.46**
YJL197W	*UBP12*	0.97	1.26	1.45	1.87	2.03	2.22	**4.64**	**0.97**	**39.92**	**15.83**	**44.57**	**16.80**	**288.72**
YJL198W	*PHO90*	0.97	1.27	1.47	1.87	2.00	2.18	**2.29**	**1.69**	**27.71**	**19.60**	**30.01**	**21.29**	**280.66**
YJL199C	*YJL199c*	0.96	1.25	1.45	1.88	2.05	2.25	**1.69**	**1.14**	**23.35**	**9.31**	**25.04**	**10.46**	**292.84**
YJL200C	*ACO2*	0.97	1.28	1.49	1.91	2.07	2.28	**1.00**	**1.06**	**8.57**	**1.47**	**9.56**	**2.53**	**277.48**
YJL200C	*ACO2*	0.89	1.06	1.24	1.73	1.92	2.11	**3.06**	**0.77**	**33.22**	**8.26**	**36.28**	**9.04**	**309.69**
YJL201W	*ECM25*	0.99	1.19	1.34	1.75	1.90	2.12	**13.66**	**5.41**	**61.53**	**43.08**	**75.19**	**48.50**	**322.61**
YJL204C	*RCY1*	0.98	1.23	1.36	1.86	1.99	2.15	**18.22**	**8.84**	**65.97**	**47.77**	**84.19**	**56.60**	**367.64**
YJL206C	*YJL206c*	1.04	1.28	1.48	2.00	2.15	2.29	**9.90**	**6.91**	**55.87**	**47.52**	**65.77**	**54.43**	**313.04**
YJL206C	*YJL206c*	0.91	1.08	1.24	1.73	1.93	2.12	**9.48**	**1.70**	**55.17**	**24.37**	**64.65**	**26.07**	**302.43**
YJL206C-A	*YJL206C-A*	1.04	1.39	1.63	2.10	2.22	2.34	**5.24**	**1.62**	**42.73**	**19.01**	**47.97**	**20.63**	**311.50**
YJL207C	*LAA1*	0.93	1.14	1.23	1.65	1.82	1.98	**7.90**	**1.95**	**52.59**	**29.15**	**60.50**	**31.10**	**312.14**
YJL208C	*NUC1*	0.97	1.13	1.27	1.88	1.87	1.98	**21.76**	**5.14**	**69.76**	**42.17**	**91.52**	**47.30**	**340.07**
YJL209W	*CBP1*	0.95	1.12	1.25	1.71	1.89	2.07	**3.55**	**1.17**	**37.80**	**15.39**	**41.35**	**16.56**	**260.56**
YJL210W	*PEX2*	0.90	1.13	1.24	1.68	1.87	2.08	**4.97**	**1.16**	**41.73**	**22.87**	**46.70**	**24.03**	**270.76**
YJL211C	*YJL211c*	0.96	1.20	1.38	1.84	2.02	2.21	**5.61**	**2.29**	**44.79**	**28.65**	**50.41**	**30.94**	**279.57**
YJL212C	*OPT1*	1.03	1.30	1.50	2.00	2.17	2.33	**1.84**	**1.11**	**28.12**	**17.29**	**29.96**	**18.40**	**286.80**
YJL213W	*YJL213w*	0.84	0.94	1.07	1.50	1.75	2.21	**1.03**	**0.90**	**13.81**	**5.24**	**14.83**	**6.15**	**297.00**
YJL214W	*HXT8*	0.92	1.11	1.24	1.70	1.90	2.11	**5.26**	**1.54**	**44.12**	**22.87**	**49.38**	**24.42**	**294.13**
YJL215C	*YJL215c*	0.95	1.17	1.31	1.77	1.94	2.14	**4.64**	**1.28**	**41.19**	**18.46**	**45.83**	**19.74**	**284.10**
YJL216C	*YJL216c*	0.88	1.04	1.16	1.59	1.76	1.98	**3.33**	**2.78**	**35.76**	**36.33**	**39.09**	**39.11**	**283.78**
YJL217W	*REE1*	0.98	1.22	1.38	1.81	1.97	2.16	**4.44**	**1.11**	**40.36**	**14.70**	**44.79**	**15.81**	**282.45**
YJL218W	*YJL218w*	1.02	1.25	1.41	1.89	2.07	2.26	**3.69**	**1.23**	**37.22**	**15.81**	**40.92**	**17.04**	**291.33**
YJR001W	*AVT1*	0.90	1.25	1.36	1.68	1.89	2.01	**15.27**	**2.92**	**71.29**	**36.79**	**86.56**	**39.71**	**301.98**
YJR003C	*YJR003c*	0.93	1.12	1.31	1.80	1.98	2.15	**8.04**	**1.91**	**55.11**	**26.64**	**63.15**	**28.55**	**311.01**
YJR004C	*SAG1*	0.93	1.01	1.04	0.94	0.94	0.90	**129.95**	**127.64**	**146.64**	**110.57**	**276.59**	**238.21**	**396.08**
YJR005C-A	*YJR005c-a*	0.96	1.21	1.26	1.65	1.89	2.04	**5.37**	**0.88**	**46.77**	**10.80**	**52.14**	**11.68**	**301.70**
YJR005W	*APL1*	0.89	1.24	1.36	1.66	1.85	1.98	**7.78**	**1.56**	**52.92**	**26.87**	**60.71**	**28.43**	**285.43**
YJR008W	*YJR008w*	0.90	1.22	1.38	1.78	1.97	2.09	**8.20**	**1.29**	**58.29**	**23.99**	**66.48**	**25.28**	**271.67**
YJR009C	*TDH2*	0.87	1.16	1.29	1.61	1.81	1.97	**9.80**	**5.15**	**59.70**	**52.02**	**69.49**	**57.18**	**239.98**
YJR010C-A	*SPC1*	1.00	1.49	1.66	2.06	2.21	2.28	**5.48**	**2.87**	**47.89**	**36.91**	**53.37**	**39.78**	**246.57**
YJR010W	*MET3*	0.98	1.49	1.67	2.05	2.20	2.29	**3.68**	**1.68**	**42.34**	**28.46**	**46.03**	**30.15**	**289.41**
YJR011C	*YJR011c*	0.95	1.35	1.48	1.94	2.12	2.23	**13.74**	**4.93**	**71.86**	**51.25**	**85.60**	**56.18**	**299.08**
YJR014W	*TMA22*	0.98	1.42	1.59	2.00	2.17	2.25	**13.74**	**0.68**	**69.71**	**8.78**	**83.45**	**9.47**	**311.54**
YJR015W	*YJR015w*	0.96	1.46	1.68	2.08	2.22	2.28	**9.48**	**0.62**	**58.91**	**9.47**	**68.39**	**10.09**	**307.84**
YJR018W	*YJR018w*	0.94	1.18	1.18	1.23	1.42	1.54	**78.35**	**56.32**	**131.77**	**116.59**	**210.12**	**172.91**	**345.65**
YJR019C	*TES1*	0.91	1.34	1.54	1.93	2.11	2.19	**9.37**	**1.48**	**56.65**	**25.60**	**66.02**	**27.08**	**305.50**
YJR020W	*YJR020w*	0.95	1.33	1.48	1.80	1.99	2.10	**6.26**	**0.74**	**50.47**	**16.42**	**56.73**	**17.16**	**309.08**
YJR021C	*REC107*	0.90	1.28	1.43	1.80	1.99	2.07	**11.25**	**2.05**	**64.22**	**31.52**	**75.48**	**33.58**	**318.52**
YJR024C	*MDE1*	0.92	1.21	1.32	1.65	1.84	2.03	**4.74**	**1.16**	**44.02**	**10.02**	**48.76**	**11.18**	**283.38**
YJR025C	*BNA1*	0.88	1.18	1.32	1.71	1.90	2.05	**20.23**	**10.52**	**78.25**	**67.17**	**98.48**	**77.69**	**317.00**
YJR026W	*YJR026w*	0.90	1.28	1.45	1.85	2.05	2.19	**8.74**	**10.56**	**56.10**	**54.74**	**64.84**	**65.31**	**327.41**
YJR030C	*YJR030c*	0.91	1.28	1.43	1.79	1.98	2.15	**0.72**	**0.75**	**8.36**	**1.88**	**9.08**	**2.63**	**296.56**
YJR031C	*GEA1*	0.91	1.25	1.35	1.77	2.02	2.21	**1.35**	**1.14**	**23.92**	**16.81**	**25.27**	**17.95**	**296.83**
YJR032W	*CPR7*	0.93	1.09	1.20	1.54	1.82	2.06	**1.94**	**0.91**	**27.04**	**5.54**	**28.98**	**6.45**	**250.16**
YJR033C	*RAV1*	0.87	1.13	1.19	1.60	1.77	1.86	**58.42**	**51.13**	**106.53**	**103.99**	**164.95**	**155.13**	**398.53**
YJR034W	*PET191*	1.01	1.25	1.44	1.86	2.00	2.10	**6.89**	**2.21**	**45.38**	**25.02**	**52.27**	**27.23**	**309.84**
YJR035W	*RAD26*	0.89	1.34	1.49	1.85	2.04	2.20	**4.27**	**2.77**	**40.26**	**28.74**	**44.53**	**31.52**	**318.81**
YJR036C	*HUL4*	0.87	1.23	1.36	1.72	1.91	2.06	**11.52**	**2.46**	**59.36**	**30.55**	**70.88**	**33.01**	**337.62**
YJR037W	*YJR037w*	0.91	1.09	1.25	1.60	1.79	1.94	**6.14**	**1.04**	**50.10**	**10.97**	**56.24**	**12.01**	**292.04**
YJR038C	*YJR038c*	0.95	1.18	1.41	2.34	2.30	2.03	**4.79**	**0.84**	**45.68**	**4.93**	**50.48**	**5.77**	**295.88**
YJR039W	*YJR039w*	0.94	1.17	1.36	1.81	2.01	2.15	**4.30**	**1.96**	**37.70**	**22.50**	**42.00**	**24.46**	**301.23**
YJR040W	*GEF1*	0.96	1.16	1.30	1.78	1.98	2.09	**1.45**	**0.77**	**20.81**	**1.88**	**22.26**	**2.66**	**269.46**
YJR043C	*POL32*	0.88	1.30	1.41	1.79	2.03	2.28	**24.40**	**15.17**	**79.90**	**65.54**	**104.30**	**80.70**	**367.51**
YJR044C	*VPS55*	0.90	1.11	1.27	1.62	1.78	1.88	**1.21**	**0.81**	**21.82**	**8.97**	**23.02**	**9.77**	**277.15**
YJR047C	*ANB1*	0.90	1.02	1.12	1.45	1.71	1.90	**1.25**	**0.81**	**17.90**	**1.77**	**19.15**	**2.58**	**273.98**
YJR048W	*CYC1*	0.88	1.25	1.36	1.67	1.86	1.98	**46.88**	**30.61**	**98.05**	**84.30**	**144.93**	**114.91**	**389.93**
YJR049C	*UTR1*	0.87	1.43	1.59	1.96	2.14	2.28	**16.52**	**4.71**	**67.47**	**42.44**	**83.99**	**47.16**	**343.71**
YJR050W	*ISY1*	0.92	1.20	1.30	1.71	1.93	2.12	**21.47**	**11.03**	**72.24**	**55.21**	**93.71**	**66.24**	**324.26**
YJR051W	*OSM1*	0.85	1.21	1.33	1.70	1.92	2.08	**15.18**	**5.24**	**66.72**	**41.65**	**81.90**	**46.89**	**347.81**
YJR052W	*RAD7*	0.95	1.30	1.46	1.84	2.08	2.26	**0.42**	**0.61**	**5.75**	**5.03**	**6.17**	**5.64**	**272.26**
YJR053W	*BFA1*	0.95	1.41	1.58	1.91	2.11	2.25	**1.00**	**1.06**	**14.20**	**13.82**	**15.20**	**14.88**	**289.47**
YJR054W	*YJR054w*	0.91	1.24	1.33	1.65	1.88	2.08	**11.62**	**7.66**	**60.82**	**50.24**	**72.45**	**57.91**	**319.63**
YJR054W	*YJR054w*	0.89	1.18	1.31	1.71	1.92	2.07	**9.89**	**2.81**	**54.56**	**28.44**	**64.45**	**31.25**	**288.24**
YJR055W	*HIT1*	0.95	1.27	1.33	1.67	1.96	2.21	**1.10**	**0.95**	**21.00**	**7.19**	**22.10**	**8.14**	**305.62**
YJR055W	*HIT1*	0.94	1.03	1.11	1.57	1.86	2.13	**0.87**	**0.81**	**16.23**	**4.99**	**17.10**	**5.80**	**265.23**
YJR055W	*HIT1*	0.96	1.11	1.19	1.52	1.85	2.11	**11.70**	**0.90**	**54.89**	**8.43**	**66.59**	**9.33**	**305.10**
YJR055W	*HIT1*	0.89	1.09	1.13	1.27	1.53	1.81	**4.00**	**1.28**	**41.58**	**9.93**	**45.58**	**11.22**	**283.59**
YJR056C	*YJR056c*	0.91	1.27	1.44	1.83	2.03	2.18	**1.86**	**1.65**	**27.84**	**21.85**	**29.71**	**23.50**	**285.42**
YJR056C	*YJR056c*	0.87	1.19	1.35	1.73	1.92	2.07	**2.27**	**1.91**	**24.12**	**16.14**	**26.39**	**18.05**	**254.69**
YJR058C	*APS2*	0.89	1.25	1.36	1.70	1.91	2.08	**12.09**	**5.43**	**61.50**	**41.40**	**73.59**	**46.83**	**345.30**
YJR058C	*APS2*	0.87	1.20	1.31	1.58	1.85	2.04	**1.82**	**2.19**	**24.56**	**21.18**	**26.37**	**23.38**	**289.46**
YJR059W	*PTK2*	0.94	1.40	1.61	2.02	2.19	2.30	**2.69**	**1.82**	**32.07**	**22.61**	**34.76**	**24.43**	**274.32**
YJR060W	*CBF1*	0.95	1.35	1.51	2.23	2.11	2.24	**14.61**	**5.99**	**63.45**	**41.75**	**78.06**	**47.74**	**354.18**
YJR060W	*CBF1*	0.96	1.19	1.26	1.53	1.75	1.95	**24.65**	**10.51**	**77.91**	**45.69**	**102.57**	**56.19**	**340.95**
YJR061W	*YJR061w*	0.86	1.17	1.28	1.65	1.85	2.03	**2.24**	**1.17**	**30.29**	**7.74**	**32.53**	**8.91**	**276.61**
YJR061W	*YJR061w*	0.90	1.26	1.39	1.74	1.94	2.09	**28.24**	**8.73**	**79.60**	**49.93**	**107.84**	**58.66**	**367.11**
YJR062C	*NTA1*	0.90	1.24	1.36	1.70	1.92	2.12	**2.03**	**0.88**	**28.83**	**6.67**	**30.86**	**7.54**	**272.24**
YJR062C	*NTA1*	0.93	1.24	1.34	1.68	1.96	2.12	**6.55**	**4.70**	**48.15**	**35.32**	**54.70**	**40.02**	**294.08**
YJR063W	*RPA12*	0.92	1.32	1.48	1.85	2.04	2.17	**6.80**	**3.30**	**48.45**	**33.16**	**55.26**	**36.46**	**308.29**
YJR066W	*TOR1*	0.91	1.12	1.28	1.62	1.79	1.93	**16.74**	**4.15**	**58.05**	**32.07**	**74.79**	**36.23**	**335.74**
YJR069C	*HAM1*	0.92	1.33	1.51	1.89	2.06	2.18	**13.07**	**10.03**	**53.16**	**42.56**	**66.23**	**52.59**	**326.93**
YJR070C	*LIA1*	0.92	1.27	1.41	1.77	1.95	2.09	**16.27**	**8.91**	**57.82**	**42.02**	**74.09**	**50.93**	**332.13**
YJR073C	*OPI3*	1.11	1.58	1.76	2.17	2.31	2.40	**3.84**	**3.02**	**26.99**	**5.88**	**30.83**	**8.90**	**245.61**
YJR074W	*MOG1*	0.96	1.37	1.59	1.98	2.14	2.23	**19.20**	**13.33**	**58.05**	**47.06**	**77.25**	**60.39**	**341.31**
YJR075W	*HOC1*	1.04	1.41	1.50	1.90	2.11	2.22	**12.70**	**4.56**	**52.89**	**27.32**	**65.59**	**31.88**	**212.72**
YJR077C	*MIR1*	0.99	1.39	1.58	1.96	2.13	2.25	**12.64**	**6.57**	**51.16**	**34.26**	**63.80**	**40.83**	**331.58**
YJR078W	*BNA2*	0.99	1.47	1.66	2.04	2.20	2.27	**16.32**	**3.26**	**56.79**	**13.64**	**73.11**	**16.89**	**330.79**
YJR079W	*YJR079w*	0.95	1.42	1.58	1.97	2.14	2.22	**14.33**	**3.17**	**52.03**	**11.05**	**66.36**	**14.22**	**328.15**
YJR080C	*AIM24*	0.93	1.46	1.65	2.00	2.14	2.21	**19.41**	**9.34**	**57.99**	**40.05**	**77.39**	**49.39**	**352.77**
YJR082C	*EAF6*	0.92	1.38	1.51	1.90	2.07	2.16	**14.75**	**3.85**	**58.54**	**23.12**	**73.29**	**26.97**	**342.13**
YJR083C	*ACF4*	0.92	1.39	1.55	1.98	2.16	2.26	**4.47**	**3.41**	**28.39**	**13.85**	**32.86**	**17.26**	**303.79**
YJR084W	*CSN12*	0.91	1.32	1.47	1.80	1.98	2.12	**7.42**	**8.43**	**39.12**	**40.30**	**46.54**	**48.73**	**301.45**
YJR085C	*YJR085c*	0.91	1.28	1.46	1.81	1.98	2.13	**4.67**	**1.14**	**40.71**	**12.03**	**45.38**	**13.16**	**289.80**
YJR086W	*STE18*	0.85	1.14	1.30	1.63	1.82	2.02	**3.66**	**0.99**	**38.88**	**9.15**	**42.54**	**10.14**	**279.48**
YJR087W	*YJR087w*	0.93	1.40	1.61	1.95	2.10	2.22	**3.22**	**4.35**	**16.26**	**22.81**	**19.48**	**27.16**	**267.17**
YJR088C	*EMC2*	0.97	1.35	1.51	1.93	2.13	2.25	**2.94**	**2.92**	**4.18**	**2.03**	**7.12**	**4.96**	**276.22**
YJR090C	*GRR1*	0.86	0.95	0.98	0.94	1.02	1.09	**8.50**	**3.15**	**52.37**	**24.54**	**60.87**	**27.69**	**302.04**
YJR090C	*GRR1*	0.89	1.12	1.15	1.15	1.28	1.42	**16.36**	**6.90**	**63.06**	**42.31**	**79.43**	**49.21**	**342.87**
YJR091C	*JSN1*	0.96	1.36	1.51	1.82	1.98	2.07	**19.82**	**20.77**	**60.31**	**60.70**	**80.13**	**81.47**	**320.77**
YJR092W	*BUD4*	1.12	1.57	1.75	2.15	2.27	2.33	**13.01**	**3.73**	**52.29**	**23.20**	**65.30**	**26.92**	**328.29**
YJR094C	*IME1*	0.97	1.39	1.56	1.94	2.12	2.24	**3.22**	**3.59**	**16.26**	**18.62**	**19.48**	**22.21**	**279.22**
YJR094W-A	*RPL43b*	0.88	1.26	1.40	1.81	2.00	2.12	**3.43**	**3.39**	**17.10**	**14.87**	**20.53**	**18.26**	**262.79**
YJR095W	*SFC1*	0.87	1.18	1.28	1.57	1.75	1.90	**10.22**	**3.43**	**43.04**	**19.78**	**53.26**	**23.21**	**313.67**
YJR096W		0.93	1.33	1.49	1.84	2.02	2.14	**11.65**	**10.43**	**50.00**	**44.34**	**61.66**	**54.77**	**315.81**
YJR096W	*YJR096w*	0.90	1.36	1.52	1.86	2.04	2.14	**3.08**	**1.34**	**37.57**	**5.96**	**40.65**	**7.30**	**271.97**
YJR097W	*JJJ3*	0.90	1.19	1.27	1.55	1.74	1.88	**18.87**	**20.02**	**59.92**	**57.80**	**78.78**	**77.82**	**317.24**
YJR098C	*YJR098c*	0.92	1.21	1.36	1.70	1.89	2.00	**16.94**	**13.04**	**53.33**	**50.54**	**70.27**	**63.59**	**329.24**

ORF.name	Strain	Optical density at 600 nm at regular intervals (h)						GLUCOSE		FRUCTOSE		TOTAL SUGARS (g/l)		TOTAL AMINO ACIDS (mg/L)
		0	26	33	48	59	78	102 h	118 h	102 h	118 h	102 h	118 h	102 h
YJR099W	YUH1	0.97	1.31	1.48	1.87	2.06	2.19	6.41	4.72	34.66	24.35	41.07	29.06	306.87
YJR100C	AIM25	0.99	1.36	1.55	1.99	2.15	2.23	20.88	18.91	55.08	70.76	75.96	89.67	163.14
YJR101W	RSM26	0.89	1.04	1.03	0.91	0.91	0.89	126.21	120.06	136.65	99.92	262.86	219.97	496.45
YJR102C	VPS25	0.99	1.46	1.57	1.83	1.94	2.02	20.77	8.96	72.19	58.00	92.96	66.96	386.57
YJR103W	URA8	1.03	1.56	1.73	2.10	2.22	2.31	11.40	3.13	48.56	9.70	59.96	12.83	320.89
YJR104C	SOD1	1.00	1.33	1.45	1.89	2.11	2.23	28.52	14.43	74.24	64.20	102.76	78.62	232.60
YJR105W	ADO1	1.01	1.39	1.47	1.77	1.95	2.11	28.08	4.86	70.99	25.85	99.07	30.70	299.42
YJR106W	ECM27	0.97	1.47	1.72	2.13	2.26	2.33	16.68	7.47	62.49	59.72	79.17	67.20	272.19
YJR107W	YJR107w	0.87	1.11	1.15	1.45	1.71	1.92	2.35	1.21	25.18	4.52	27.53	5.74	283.14
YJR107W	YJR107w	0.95	1.47	1.69	2.08	2.21	2.28	15.39	7.27	60.95	45.73	76.35	53.00	297.77
YJR108W	ABM1	1.08	1.60	1.77	2.11	2.24	2.34	4.83	3.04	33.05	4.45	37.88	7.50	310.80
YJR109C	CPA2	0.95	1.32	1.40	1.71	1.94	2.09	1.30	1.35	12.77	2.88	14.07	4.23	267.90
YJR110W	YMR1	1.14	1.64	1.81	2.19	2.31	2.42	3.08	3.02	6.37	2.14	9.45	5.17	271.01
YJR111C	YJR111c	0.96	1.50	1.67	2.05	2.21	2.31	3.27	3.06	14.77	2.47	18.04	5.53	278.15
YJR112W-A	YJR112w-a	0.90	1.20	1.38	1.81	2.09	2.02	6.48	1.02	48.34	10.49	54.81	11.51	297.25
YJR113C	RSM7	0.97	1.33	1.42	1.82	2.03	2.18	34.09	28.65	78.26	84.17	112.36	112.82	309.37
YJR113C	RSM7	0.91	1.19	1.24	1.47	1.65	1.77	51.09	37.47	104.72	95.90	155.81	133.37	335.88
YJR114W	YJR114w	0.89	1.05	1.05	0.92	0.92	0.90	123.87	118.21	135.62	98.79	259.49	217.00	502.10
YJR115W	YJR115w	1.02	1.55	1.72	2.06	2.20	2.28	7.40	3.06	43.43	6.91	50.83	9.98	305.13
YJR116W	YJR116w	0.95	1.45	1.67	2.05	2.19	2.27	14.75	11.56	58.20	55.61	72.95	67.17	281.98
YJR117W	STE24	0.93	1.42	1.60	2.05	2.18	2.28	4.77	7.40	38.65	43.84	43.42	51.24	267.31
YJR118C	ILM1	0.94	1.21	1.33	1.68	1.91	2.14	1.17	0.93	0.88	0.15	2.04	1.08	232.28
YJR119C	JHD2	0.92	1.30	1.42	1.88	2.07	2.20	28.56	15.57	71.60	64.41	100.16	79.98	205.73
YJR120W	YJR120w	0.89	1.17	1.26	1.60	1.79	1.95	14.29	2.92	68.51	35.89	82.80	38.82	326.78
YJR121W	ATP2	0.96	1.28	1.40	1.93	2.11	2.23	17.63	10.05	68.25	56.13	85.88	66.18	231.22
YJR122W	IBA57	0.90	1.20	1.28	1.69	1.94	2.08	14.56	7.06	66.57	47.78	81.13	54.84	303.19
YJR124C	YJR124c	0.95	1.32	1.56	1.95	2.11	2.22	29.83	15.99	80.84	68.56	110.67	84.55	257.68
YJR125C	ENT3	0.98	1.40	1.66	2.05	2.21	2.30	21.96	8.20	74.17	52.64	96.13	60.85	233.20
YJR126C	VPS70	1.03	1.46	1.69	2.10	2.24	2.31	22.03	13.24	73.25	64.18	95.28	77.42	281.53
YJR127C	RSF2	0.97	1.45	1.66	2.08	2.24	2.31	9.06	3.04	48.37	6.67	57.43	9.72	302.65
YJR128W	YJR128w	0.95	1.43	1.65	2.06	2.20	2.28	8.18	3.28	41.66	14.92	49.84	18.21	302.24
YJR129C	YJR129c	0.88	1.25	1.39	1.82	2.01	2.12	8.44	3.60	47.40	20.45	55.84	24.05	298.24
YJR130C	STR2	1.00	1.39	1.53	1.98	2.17	2.27	12.39	4.67	57.03	34.25	69.42	38.92	321.47
YJR131W	MNS1	0.95	1.35	1.54	1.95	2.12	2.23	22.83	13.94	69.63	60.56	92.46	74.49	275.44
YJR133W	XPT1	0.99	1.43	1.71	2.11	2.25	2.33	17.16	2.93	62.39	29.32	79.55	32.26	265.06
YJR134C	SGM1	0.93	1.31	1.46	1.83	2.02	2.16	23.92	16.16	71.76	61.80	95.68	77.96	314.26
YJR135C	MCM22	1.06	1.43	1.48	1.88	2.10	2.23	32.87	16.85	75.27	63.94	108.14	80.80	371.58
YJR135W-A	TIM8	0.93	1.24	1.35	1.66	1.85	2.00	4.28	0.89	44.83	10.11	49.11	11.00	279.65
YJR137C	MET5	0.97	1.44	1.61	2.02	2.18	2.29	7.97	3.05	41.20	8.70	49.17	11.75	319.70
YJR140C	HIR3	0.90	1.26	1.37	1.77	1.97	2.11	36.31	13.62	82.39	63.49	118.71	77.11	211.33
YJR142W	YJR142w	0.91	1.25	1.38	1.86	2.06	2.20	29.29	18.69	76.96	68.13	106.25	86.82	181.37
YJR143C	PMT4	0.91	1.16	1.27	1.61	1.81	1.99	8.89	1.38	52.22	15.51	61.11	16.89	306.64
YJR144W	MGM101	0.98	1.24	1.28	1.67	2.00	2.12	4.90	1.27	47.09	11.16	52.00	12.43	244.98
YJR145C	RPS4a	0.94	1.26	1.39	1.87	2.04	2.14	39.89	26.64	88.24	82.71	128.13	109.35	219.95
YJR146W	YJR146w	0.97	1.50	1.70	2.08	2.21	2.29	7.79	3.08	45.68	9.71	53.46	12.80	309.68
YJR147W	HMS2	1.00	1.54	1.72	2.08	2.21	2.31	6.21	3.05	39.34	7.25	45.55	10.31	302.07
YJR148W	BAT2	0.95	1.26	1.48	1.87	2.06	2.17	22.69	20.18	76.64	72.91	101.34	93.10	213.83
YJR149W	YJR149w	1.01	1.52	1.75	2.12	2.25	2.32	4.87	3.03	32.99	5.87	37.85	8.89	278.58
YJR150C	DAN1	1.00	1.30	1.51	1.88	2.06	2.17	26.61	14.07	78.60	62.91	105.21	76.98	257.45
YJR151C	DAN4	0.94	1.30	1.51	1.90	2.06	2.21	6.59	1.21	48.50	14.23	55.09	15.44	297.03
YJR151W-A	YJR151w-a	0.84	1.15	1.29	1.59	1.77	1.93	3.85	2.62	40.66	27.17	44.51	29.78	283.00
YJR152W	DAL5	1.09	1.60	1.75	2.14	2.28	2.41	3.42	3.08	15.94	4.69	19.37	7.77	253.03
YJR153W	PGU1	1.01	1.40	1.64	2.03	2.18	2.28	19.73	14.54	73.01	63.41	92.74	77.94	315.24
YJR154W	YJR154w	0.96	1.43	1.59	1.97	2.15	2.26	2.93	2.99	9.95	2.50	12.89	5.48	280.77
YKL001C	MET14	1.00	1.33	1.54	2.04	2.24	2.37	1.08	0.97	10.05	4.87	11.12	5.85	239.66
YKL002W	DID4	0.87	1.15	1.27	1.61	1.77	1.91	1.22	0.79	13.46	2.11	14.68	2.90	248.61
YKL002W	DID4	0.93	1.14	1.20	1.46	1.62	1.71	33.78	11.98	99.79	69.44	133.58	81.42	355.64
YKL003C	MRP17	0.91	1.07	1.08	0.95	0.95	0.92	124.48	127.15	136.64	142.99	261.12	270.14	509.45
YKL005C	BYE1	1.00	1.46	1.67	2.02	2.17	2.27	23.71	11.88	76.07	61.57	99.78	73.45	342.84
YKL006W	RPL14a	0.91	1.04	1.09	1.57	1.87	2.05	21.22	9.60	74.72	57.28	95.93	66.88	328.43
YKL007W	CAP1	1.04	1.30	1.44	2.00	2.19	2.30	7.33	1.53	50.94	28.43	58.28	29.96	292.44
YKL008C	LAC1	0.96	1.20	1.40	1.90	2.06	2.21	7.92	2.00	53.93	29.41	61.85	31.41	304.76
YKL009W	MRT4	0.98	1.17	1.31	1.84	2.08	2.27	1.58	1.18	24.27	12.42	25.85	13.60	275.79
YKL010C	UFD4	0.98	1.36	1.61	2.04	2.19	2.32	1.01	0.96	6.99	0.78	7.99	1.74	292.45
YKL011C	CCE1	0.95	1.13	1.21	1.73	1.95	2.11	7.73	1.41	50.07	17.72	57.79	19.13	280.89
YKL015W	PUT3	0.91	1.14	1.29	1.82	2.03	2.17	5.75	1.88	46.72	25.75	52.47	27.62	296.95
YKL016C	ATP7	0.91	1.09	1.11	1.11	1.39	1.66	18.29	6.43	75.91	53.64	94.19	60.07	258.27
YKL017C	HCS1	1.03	1.34	1.57	2.07	2.23	2.32	5.52	5.67	43.93	43.50	49.45	49.17	298.91
YKL018C-A	YKL018c-a	0.87	1.23	1.37	1.69	1.87	2.03	10.04	2.80	55.60	25.70	65.64	28.49	315.86
YKL020C	SPT23	0.99	1.22	1.39	1.89	2.09	2.26	7.40	3.18	53.74	34.11	61.14	37.29	298.62
YKL023W	YKL023w	0.98	1.17	1.32	1.79	2.00	2.18	12.50	4.60	63.45	43.59	75.95	48.18	298.64
YKL025C	PAN3	0.99	1.25	1.44	2.06	2.24	2.34	2.59	0.96	35.90	16.93	38.49	17.89	289.77
YKL026C	GPX1	0.94	1.19	1.34	1.87	2.07	2.21	3.06	1.01	39.18	15.33	42.24	16.34	294.26
YKL027W	YKL027w	1.02	1.21	1.33	1.94	2.18	2.34	5.41	1.37	49.12	25.24	54.53	26.62	296.32
YKL029C	MAE1	0.97	1.23	1.41	1.90	2.05	2.20	4.69	2.64	45.10	34.25	49.79	36.89	297.45
YKL030W	YKL030w	1.04	1.53	1.77	2.14	2.28	2.36	19.22	15.32	72.51	68.49	91.72	83.80	329.51
YKL031W	YKL031w	1.02	1.30	1.52	1.96	2.11	2.24	2.51	1.43	31.36	21.12	33.87	22.55	290.45
YKL032C	IXR1	1.00	1.41	1.70	2.17	2.31	2.44	1.06	0.97	7.22	2.42	8.27	3.38	252.02
YKL033W-A	YKL033w-a	0.95	1.34	1.48	1.97	1.94	2.08	15.37	5.79	62.38	37.49	77.75	43.28	314.34
YKL033W-A	YKL033w-a	0.93	1.23	1.42	1.83	2.01	2.13	7.49	1.48	50.90	17.18	58.38	18.66	289.17
YKL034W	TUL1	0.98	1.31	1.52	2.07	2.24	2.37	2.12	1.03	26.96	7.72	31.09	8.75	296.67
YKL037W	AIM26	1.00	1.30	1.47	1.99	2.18	2.30	1.20	0.79	12.88	3.01	14.08	3.80	270.15
YKL038W	RGT1	1.02	1.24	1.41	2.04	2.27	2.42	2.84	1.43	23.42	15.89	25.46	17.32	270.25
YKL039W	PTM1	0.99	1.24	1.42	2.09	2.11	2.20	5.71	3.89	46.85	37.94	52.56	41.83	304.79
YKL040C	NFU1	1.00	1.32	1.54	2.03	2.20	2.29	8.34	3.21	54.10	34.94	62.44	38.15	304.31
YKL041W	VPS24	1.03	1.29	1.41	1.84	1.97	2.04	33.61	22.19	92.20	84.73	125.80	106.91	358.85
YKL043W	PHD1	1.00	1.27	1.46	2.03	2.21	2.31	1.37	1.01	25.20	7.75	26.57	8.76	281.39
YKL044W	YKL044w	0.99	1.27	1.47	2.04	2.24	2.33	0.79	0.76	7.00	3.65	7.79	4.41	285.95
YKL046C	DCW1	1.04	1.25	1.38	1.90	2.12	2.26	3.75	1.74	48.41	37.73	52.17	39.46	318.11
YKL047W	YKL047w	0.98	1.17	1.37	1.95	2.13	2.28	3.33	2.04	37.64	25.95	40.97	27.99	304.83
YKL048C	ELM1	0.99	1.11	1.13	1.49	1.73	1.94	36.92	21.05	95.44	73.61	132.37	94.66	336.61
YKL050C	YKL050c	0.97	1.24	1.43	1.96	2.14	2.28	2.35	1.02	32.14	7.47	34.49	8.50	292.87
YKL051W	SFK1	1.01	1.29	1.49	2.02	2.20	2.31	13.18	4.04	62.42	40.59	75.60	44.62	318.06
YKL053C-A	MDM35	0.97	1.17	1.34	1.83	2.01	2.16	4.90	0.86	43.84	10.35	48.74	11.21	316.13
YKL053W	YKL053w	0.98	1.24	1.42	2.00	2.15	2.25	8.10	3.31	55.37	39.25	63.46	42.55	319.56
YKL054C	DEF1	0.98	1.13	1.13	1.38	1.63	1.84	66.21	56.84	107.25	101.56	173.46	158.40	370.01
YKL055C	OAR1	0.96	1.31	1.56	2.02	2.17	2.27	0.58	0.58	5.46	2.79	6.05	3.38	266.98
YKL056C	TMA19	0.92	1.13	1.20	1.72	1.96	2.13	1.94	0.49	32.81	12.17	34.76	12.67	284.78
YKL057C	NUP120	0.98	1.14	1.14	1.26	1.45	1.68	74.74	62.98	118.31	111.13	193.06	174.11	411.03
YKL061W	YKL061w	0.96	1.19	1.34	1.91	2.10	2.22	12.05	5.05	62.25	40.15	74.30	45.20	320.53
YKL062W	MSN4	1.05	1.38	1.59	2.09	2.24	2.35	0.98	0.97	5.23	1.81	6.22	2.78	275.95
YKL063C	YKL063c	1.02	1.37	1.61	2.04	2.19	2.30	9.50	1.54	57.06	22.27	66.56	23.81	300.70
YKL064W	MNR2	1.02	1.40	1.63	2.10	2.24	2.33	3.97	1.96	41.45	24.63	45.42	26.59	282.17
YKL065C	YET1	0.99	1.30	1.51	1.99	2.18	2.29	0.85	1.12	12.63	6.20	13.48	7.31	273.30
YKL065C	YET1	0.93	1.22	1.38	1.76	1.96	2.08	14.77	1.14	61.25	11.93	76.01	13.07	316.81
YKL066W	YKL066w	0.95	1.29	1.51	2.03	2.18	2.27	3.77	2.69	38.72	31.95	42.49	34.65	284.53
YKL067W	YNK1	0.95	1.28	1.49	1.97	2.12	2.23	1.39	3.10	24.71	34.37	26.10	37.46	276.80
YKL068W	NUP100	0.99	1.31	1.53	2.05	2.23	2.35	0.83	0.98	7.66	5.16	8.49	6.14	246.73
YKL068W-A	YKL068w-a	0.92	1.25	1.40	1.76	1.95	2.07	7.26	0.86	50.91	10.02	58.18	10.89	290.67
YKL069W	YKL069w	0.95	1.29	1.53	2.01	2.16	2.24	2.31	1.00	33.93	9.59	36.24	10.59	285.94
YKL070W	YKL070w	0.93	1.23	1.47	1.98	2.15	2.22	2.05	0.93	32.61	9.57	34.66	10.50	293.45
YKL071W	YKL071w	0.93	1.20	1.40	1.90	2.08	2.18	7.70	1.85	56.80	25.01	64.51	26.86	310.20
YKL072W	STB6	0.89	1.12	1.29	1.93	2.13	2.23	0.25	0.99	13.21	7.36	13.45	8.35	273.68
YKL073W	LHS1	0.91	1.08	1.18	1.67	1.89	2.04	8.30	12.07	59.00	58.91	67.30	70.99	301.15
YKL074C	MUD2	1.00	1.21	1.34	1.88	2.15	2.28	1.46	1.35	26.54	23.02	28.00	24.37	273.78
YKL075C	YKL075c	1.02	1.31	1.50	1.98	2.14	2.25	14.49	5.75	65.02	45.60	79.51	51.35	329.89
YKL076C	YKL076c	1.04	1.37	1.57	1.98	2.15	2.24	12.23	4.23	61.93	40.23	74.16	44.45	321.40
YKL077W	YKL077w	1.04	1.44	1.67	2.11	2.25	2.34	3.56	1.46	41.03	20.80	44.59	22.26	297.48
YKL079W	SMY1	1.04	1.46	1.70	2.10	2.24	2.32	2.18	1.96	29.55	23.66	31.73	25.62	282.80
YKL080W	VMA5	0.96	1.19	1.19	1.22	1.53	1.84	51.18	29.10	100.14	86.19	151.32	115.29	349.22
YKL081W	TEF4	0.97	1.20	1.30	1.75	1.92	2.00	30.53	16.34	93.25	76.83	123.78	93.17	356.19
YKL084W	HOT13	0.93	1.22	1.39	1.87	2.15	2.15	0.93	1.09	8.28	1.66	9.21	2.75	266.73
YKL085W	MDH1	0.96	1.26	1.44	1.95	2.13	2.24	2.23	1.17	31.02	10.72	33.25	11.89	286.60
YKL086W	SRX1	0.94	1.18	1.31	1.71	1.91	2.04	0.65	1.20	9.34	1.93	9.99	3.13	281.77
YKL087C	CYT2	0.94	1.17	1.35	1.85	2.05	2.10	1.13	2.06	27.08	26.72	28.21	28.78	267.58
YKL090W	CUE2	0.99	1.20	1.36	1.81	2.00	2.11	5.37	10.44	46.96	58.00	52.33	68.44	284.96
YKL091C	YKL091c	0.94	1.20	1.35	1.82	1.99	2.11	9.93	3.36	56.82	36.86	66.75	40.22	305.84
YKL092C	BUD2	0.99	1.38	1.62	2.07	2.20	2.30	5.81	1.45	46.13	18.12	51.94	19.57	295.84
YKL093W	MBR1	0.97	1.31	1.48	1.88	2.06	2.20	0.88	1.06	6.10	2.30	6.98	3.36	270.38
YKL094W	YJU3	1.01	1.44	1.65	2.14	2.26	2.33	7.50	5.53	55.34	49.39	62.84	54.92	297.83
YKL096C-B	YKL096c-b	0.91	1.16	1.22	1.50	1.73	1.94	3.84	0.54	37.39	5.62	41.23	6.16	252.93
YKL096W	CWP1	0.97	1.36	1.61	2.07	2.21	2.31	1.06	1.33	12.89	14.69	13.95	16.02	254.95
YKL096W-A	CWP2	0.87	1.02	1.17	1.59	1.82	1.99	1.10	0.68	16.64	4.06	17.74	4.73	287.39
YKL097C	YKL097c	0.98	1.33	1.52	2.02	2.17	2.27	1.44	1.94	21.19	25.23	22.63	27.17	279.10

ORF.name	Strain	Optical density at 600 nm at regular intervals (h)						GLUCOSE		FRUCTOSE		TOTAL SUGARS (g/l)		TOTAL AMINO ACIDS (mg/L)
		0	26	33	48	59	78	102 h	118 h	102 h	118 h	102 h	118 h	102 h
YKL098W	MTC2	0.95	1.30	1.52	1.98	2.11	2.17	6.87	3.00	46.12	29.48	52.99	32.48	314.76
YKL100C	YKL100c	1.01	1.39	1.62	2.06	2.21	2.30	2.94	1.23	33.78	14.81	36.72	16.04	299.30
YKL101W	HSL1	0.92	1.22	1.30	1.64	1.89	2.07	12.59	5.45	60.06	40.56	72.64	46.01	293.33
YKL102C	YKL102c	0.94	1.25	1.42	1.92	2.11	2.23	0.72	0.95	11.15	3.38	11.88	4.33	275.22
YKL103C	LAP4	0.97	1.25	1.43	1.90	2.09	2.20	1.64	1.16	23.02	19.02	24.66	20.18	272.72
YKL105C	YKL105c	1.01	1.22	1.38	1.89	2.08	2.19	4.98	5.16	47.24	45.04	52.21	50.20	293.95
YKL106C-A	YKL106c-a	1.00	1.35	1.57	1.96	2.15	2.27	11.25	4.15	60.16	31.86	71.41	36.02	318.68
YKL106W	AAT1	1.00	1.30	1.50	1.99	2.17	2.27	4.13	1.82	42.41	25.43	46.54	27.25	298.86
YKL107W	YKL107w	0.94	1.22	1.42	1.95	2.12	2.22	6.07	1.72	48.53	22.17	54.60	23.89	312.71
YKL109W	HAP4	0.94	1.23	1.47	2.01	2.19	2.28	2.58	1.28	31.85	14.01	34.43	15.29	293.93
YKL110C	KTI12	1.01	1.34	1.54	2.03	2.19	2.28	10.38	7.19	61.03	49.99	71.41	57.18	306.92
YKL113C	RAD27	0.90	1.07	1.13	1.50	1.70	1.84	14.11	10.46	69.57	62.05	83.69	72.51	322.59
YKL114C	APN1	1.00	1.31	1.53	2.06	2.22	2.31	2.32	1.99	30.64	24.73	32.97	26.72	291.66
YKL115C	YKL115c	0.90	1.13	1.37	1.92	2.12	2.29	1.15	1.26	13.89	4.21	15.04	5.47	274.04
YKL116C	PRR1	0.93	1.19	1.33	1.82	2.03	2.15	2.06	1.16	28.35	11.74	30.41	12.90	296.44
YKL117W	SBA1	0.98	1.36	1.58	2.12	2.26	2.33	1.25	1.11	15.16	5.64	16.41	6.75	270.15
YKL118W	YKL118w	0.89	1.08	1.09	1.10	1.42	1.73	40.01	18.93	96.63	76.84	136.64	95.77	333.75
YKL119C	VPH2	0.92	1.08	1.10	1.06	1.28	1.56	40.84	25.82	99.46	84.19	140.30	110.00	327.23
YKL120W	OAC1	0.90	1.12	1.27	1.76	1.96	2.08	1.49	0.97	22.36	17.92	23.85	18.89	290.90
YKL121W	DGR2	0.96	1.16	1.28	1.76	1.97	2.10	4.64	3.20	45.67	37.88	50.31	41.08	289.83
YKL123W	YKL123w	1.01	1.40	1.62	2.07	2.22	2.31	1.49	1.28	21.37	6.41	22.85	7.69	289.22
YKL124W	SSH4	0.85	1.03	1.14	1.66	1.88	2.02	1.20	1.11	12.27	6.56	13.47	7.67	271.26
YKL126W	YPK1	0.89	1.15	1.29	1.75	1.93	2.02	7.61	2.36	51.47	29.05	59.08	31.41	309.54
YKL127W	PGM1	0.95	1.26	1.47	1.92	2.08	2.16	2.67	2.26	31.23	29.18	33.90	31.44	284.46
YKL128C	PMU1	0.90	1.19	1.39	1.87	2.03	2.13	1.37	1.58	17.24	20.85	18.61	22.43	284.54
YKL129C	MYO3	0.93	1.19	1.37	1.89	2.07	2.16	2.31	1.45	30.83	18.75	33.14	20.20	283.15
YKL130C	SHE2	0.92	1.23	1.46	1.98	2.15	2.24	2.14	1.17	28.92	15.42	31.06	16.59	289.68
YKL131W	YKL131w	0.87	1.06	1.18	1.60	1.79	1.90	3.01	1.09	36.76	9.20	39.77	10.29	295.52
YKL132C	RMA1	0.96	1.24	1.42	1.83	2.00	2.10	1.51	1.01	22.28	8.09	23.79	9.10	291.92
YKL133C	YKL133c	0.85	1.04	1.14	1.74	1.96	2.08	4.74	1.05	46.59	18.03	51.33	19.08	292.55
YKL134C	OCT1	0.88	1.01	0.99	1.03	1.05	1.01	151.35	96.27	154.08	117.90	305.43	214.17	523.91
YKL135C	APL2	0.96	1.13	1.17	1.60	1.86	2.03	14.10	8.19	70.94	55.91	85.04	64.11	340.27
YKL136W	YKL136w	0.93	1.16	1.34	1.81	1.99	2.12	3.79	0.92	41.86	10.56	45.65	11.49	297.66
YKL137W	CMC1	0.96	1.25	1.45	1.92	2.10	2.19	3.14	1.72	36.42	22.18	39.55	23.91	299.44
YKL137W	CMC1	0.92	1.21	1.34	1.67	1.87	2.03	4.72	0.94	41.76	7.57	46.48	8.51	279.16
YKL138C	MRPL31	0.92	1.19	1.37	1.84	2.02	2.11	2.80	2.95	32.64	33.37	35.44	36.32	283.93
YKL139W	CTK1	0.87	0.87	0.88	0.98	1.11	1.24	81.67	72.19	112.92	107.70	194.60	179.90	386.46
YKL140W	TGL1	0.96	1.32	1.56	2.05	2.21	2.28	1.20	1.26	14.33	11.67	15.53	12.93	290.86
YKL142W	MRP8	0.92	1.26	1.47	1.96	2.11	2.20	2.18	1.34	29.06	17.20	31.25	18.54	285.84
YKL143W	LTV1	0.93	1.10	1.12	1.44	1.78	2.08	1.31	1.21	24.22	12.79	25.53	14.00	259.83
YKL146W	AVT3	0.93	1.18	1.35	1.77	1.95	2.05	1.28	1.25	15.76	16.27	17.04	17.51	275.12
YKL147C	YKL147c	0.97	1.27	1.43	1.87	2.08	2.20	1.12	1.00	13.26	4.06	14.39	5.06	273.43
YKL148C	SDH1	0.99	1.29	1.50	1.97	2.14	2.24	1.54	0.97	21.74	6.57	23.27	7.54	271.94
YKL149C	DBR1	0.94	1.21	1.36	1.94	2.12	2.22	11.67	11.41	60.55	59.96	72.22	71.37	312.51
YKL150W	MCR1	0.94	1.22	1.37	1.79	1.94	2.03	1.58	1.17	23.35	21.01	24.93	22.18	288.18
YKL151C	YKL151c	0.99	1.21	1.35	1.86	2.08	2.20	3.56	2.48	39.45	31.35	43.01	33.82	277.58
YKL155C	RSM22	0.87	1.05	1.01	0.90	0.90	0.86	120.43	119.97	139.90	106.93	260.33	226.89	468.67
YKL156W	RPS27a	0.93	1.21	1.36	1.88	2.09	2.22	2.82	2.74	31.12	26.31	33.94	29.05	281.38
YKL157W	APE2	0.96	1.35	1.55	2.00	2.14	2.24	2.52	2.04	30.98	25.98	33.49	28.02	288.54
YKL157W	APE2	0.98	1.37	1.58	1.97	2.11	2.22	7.47	1.41	52.15	16.77	59.62	18.18	301.28
YKL158W	YKL158W	0.93	1.25	1.46	2.06	2.13	2.08	2.75	2.03	32.71	27.05	35.47	29.08	292.45
YKL159C	RCN1	0.98	1.37	1.56	2.02	2.17	2.25	2.32	1.99	30.16	19.33	32.48	21.32	292.70
YKL160W	ELF1	1.04	1.40	1.59	2.07	2.25	2.38	0.92	0.93	7.62	2.09	8.54	3.02	290.78
YKL161C	KDX1	0.95	1.24	1.42	1.87	2.04	2.15	1.87	1.33	24.57	19.64	26.44	20.97	286.57
YKL162C	YKL162c	0.96	1.31	1.56	2.05	2.20	2.30	3.58	1.09	38.52	9.44	42.10	10.54	303.57
YKL162C-A	YKL162c-a	1.02	1.49	1.73	2.11	2.23	2.30	8.99	3.96	50.53	24.64	59.52	28.60	323.28
YKL163W	PIR3	0.91	1.17	1.38	1.89	2.07	2.17	3.29	1.25	38.42	16.68	41.71	17.93	303.90
YKL164C	PIR1	0.95	1.25	1.47	1.97	2.13	2.22	1.75	1.23	23.49	21.05	25.25	22.28	277.05
YKL166C	TPK3	0.99	1.28	1.48	1.97	2.16	2.30	1.13	0.74	0.59	0.54	1.72	1.28	274.24
YKL167C	MRP49	0.99	1.21	1.33	1.85	2.05	2.18	4.88	2.16	45.93	28.25	50.81	30.41	291.29
YKL168C	KKQ8	1.06	1.33	1.50	2.02	2.21	2.33	6.67	3.25	49.15	33.99	55.81	37.24	318.26
YKL169C	YKL169c	0.90	1.06	1.05	1.12	1.27	1.49	65.16	68.28	113.16	124.46	178.32	192.75	366.79
YKL170W	MRPL38	0.98	1.13	1.10	1.14	1.16	1.12	132.66	142.09	141.11	148.45	273.77	290.54	562.55
YKL171W	NNK1	0.90	1.16	1.29	1.73	1.93	2.04	3.40	3.16	36.55	36.18	39.94	39.33	265.90
YKL174C	TPO5	0.98	1.29	1.48	2.02	2.20	2.30	1.01	1.14	8.97	5.52	9.98	6.66	286.63
YKL175W	ZRT3	0.90	1.12	1.23	1.69	1.92	2.06	1.17	1.38	14.97	17.67	16.14	19.05	261.82
YKL176C	LST4	0.96	1.23	1.39	1.81	1.99	2.10	11.31	11.17	56.72	58.71	68.03	69.88	340.92
YKL177W	YKL177w	0.95	1.20	1.40	1.90	2.08	2.18	3.37	1.97	37.34	27.80	40.70	29.77	298.62
YKL178C	STE3	0.90	1.10	1.21	1.73	1.94	2.04	3.27	5.83	36.33	50.91	39.61	56.74	292.70
YKL179C	COY1	0.89	1.12	1.26	1.78	1.98	2.09	6.98	5.90	48.72	47.49	55.70	53.40	312.24
YKL183W	LOT5	0.93	1.10	1.22	1.81	2.05	2.19	1.23	1.13	13.87	11.63	15.09	12.76	290.80
YKL184W	SPE1	1.02	1.35	1.60	2.10	2.27	2.35	5.35	1.09	40.54	10.23	45.89	11.33	316.16
YKL185W	ASH1	0.94	1.26	1.46	1.94	2.11	2.20	5.41	1.94	40.80	22.23	46.21	24.16	309.55
YKL187C	YKL187c	1.02	1.42	1.63	2.04	2.19	2.26	17.57	5.07	66.84	42.39	84.42	47.47	338.30
YKL188C	PXA2	0.99	1.38	1.61	2.07	2.22	2.30	5.90	1.38	48.01	18.71	53.91	20.09	310.23
YKL190W	CNB1	0.94	1.20	1.35	1.79	1.99	2.06	19.40	7.40	72.22	46.30	91.61	53.70	332.96
YKL191W	DPH2	1.03	1.47	1.57	1.93	2.09	2.22	6.56	6.84	40.49	38.18	47.05	45.03	312.52
YKL194C	MST1	1.04	1.23	1.25	1.10	1.10	1.09	126.22	121.70	133.86	132.65	260.08	254.35	541.76
YKL197C	PEX1	0.92	1.38	1.48	1.93	2.08	2.19	14.84	10.87	58.15	49.75	72.99	60.62	309.28
YKL198C	PTK1	0.97	1.33	1.49	1.90	2.10	2.27	1.60	0.75	20.03	3.20	21.63	3.95	278.39
YKL198C	PTK1	0.93	1.39	1.49	1.90	2.06	2.18	12.15	10.15	54.74	45.81	66.89	55.96	322.23
YKL199C	YKL199C	1.00	1.39	1.45	1.84	2.02	2.15	19.17	11.35	61.20	50.52	80.38	61.86	337.35
YKL200C	YKL200C	0.98	1.40	1.56	1.85	2.09	2.11	16.98	13.62	60.95	54.47	77.93	68.09	333.59
YKL201C	MNN4	0.89	1.00	1.12	1.59	1.80	1.99	4.57	1.78	42.25	15.96	46.81	17.74	304.91
YKL201C	MNN4	0.96	1.34	1.56	1.93	2.08	2.21	8.59	1.34	52.11	16.74	60.70	18.08	297.18
YKL202W	YKL202w	0.92	1.10	1.29	1.80	1.98	2.11	13.83	4.87	60.63	40.45	74.46	45.32	322.32
YKL204W	EAP1	0.87	0.92	0.96	1.15	1.36	1.60	61.13	47.04	99.76	91.38	160.90	138.42	352.77
YKL205W	LOS1	1.01	1.43	1.55	1.93	2.11	2.25	14.49	10.04	56.28	46.68	70.78	56.73	337.74
YKL206C	ADD66	0.97	1.47	1.65	2.00	2.14	2.24	20.40	16.72	64.97	59.46	85.37	76.18	336.85
YKL207W	AIM27	0.98	1.47	1.61	1.90	2.04	2.16	11.92	7.34	54.05	40.92	65.97	48.26	331.89
YKL208W	CBT1	0.99	1.44	1.62	2.04	2.18	2.28	12.81	10.65	54.96	49.23	67.77	59.88	278.32
YKL211C	TRP3	0.95	1.19	1.29	1.66	1.92	2.11	9.90	2.53	59.42	30.78	69.32	33.30	328.76
YKL212W	SAC1	0.94	1.33	1.39	1.59	1.78	1.91	45.05	39.50	99.15	100.90	144.21	140.40	409.01
YKL213C	DOA1	1.01	1.53	1.68	2.10	2.22	2.31	6.26	3.04	43.56	20.16	49.82	23.20	308.02
YKL214C	YRA2	0.97	1.44	1.55	2.00	2.15	2.27	14.12	10.33	54.77	46.80	68.89	57.12	308.32
YKL215C	OXP1	1.03	1.27	1.49	2.00	2.17	2.31	16.85	1.41	64.80	23.43	81.65	24.84	330.42
YKL216W	URA1	0.83	1.12	1.10	0.98	1.09	1.18	55.55	38.88	109.30	89.21	164.85	128.09	369.95
YKL217W	JEN1	1.00	1.39	1.44	1.89	2.08	2.21	13.43	6.74	57.04	38.56	70.47	45.30	311.79
YKL218C	SRY1	0.90	1.27	1.36	1.65	1.82	1.94	18.13	8.26	63.30	44.69	81.43	52.95	347.32
YKL220C	FRE2	0.92	1.12	1.33	1.83	2.01	2.17	11.67	1.45	56.86	23.68	68.53	25.13	321.81
YKL221W	MCH2	0.95	1.41	1.51	1.82	1.97	2.08	17.24	10.66	59.89	47.59	77.13	58.25	344.84
YKL222C	YKL222c	1.00	1.43	1.60	1.97	2.13	2.23	16.06	15.77	57.99	54.44	74.04	70.21	337.78
YKR001C	VPS1	0.98	1.50	1.70	2.06	2.19	2.28	4.93	4.51	29.93	23.98	34.86	28.49	278.15
YKR003W	OSH6	0.92	1.36	1.55	1.96	2.11	2.21	14.31	6.91	55.65	39.23	69.96	46.14	339.86
YKR004C-A	YKR004C-A	0.92	1.28	1.49	1.90	2.07	2.18	1.82	4.11	25.69	29.96	27.52	34.07	260.43
YKR005C	YKR005c	0.93	1.35	1.44	1.82	2.00	2.12	21.80	11.40	68.51	48.60	90.31	60.00	351.14
YKR006C	MRPL13	0.92	0.98	1.01	0.91	0.92	0.88	136.19	120.56	157.55	111.29	293.74	231.85	393.09
YKR007W	MEH1	0.98	1.53	1.66	1.97	2.09	2.17	44.38	41.79	84.21	85.45	128.59	127.24	416.86
YKR009C	FOX2	1.00	1.51	1.68	2.07	2.19	2.29	15.42	8.50	59.68	44.97	75.10	53.46	341.05
YKR010C	TOF2	0.89	1.01	1.14	1.55	1.76	1.97	5.73	0.92	45.76	15.74	51.49	16.65	302.78
YKR011C	YKR011c	0.95	1.32	1.42	1.80	1.97	2.10	12.58	8.59	52.88	42.27	65.46	50.86	319.68
YKR012C	YKR012c	0.94	1.36	1.45	1.88	2.05	2.19	13.67	11.03	54.32	48.44	67.99	59.46	331.68
YKR013W	PRY2	0.89	1.31	1.41	1.88	2.04	2.16	12.22	13.36	54.11	52.40	66.33	65.76	325.07
YKR014C	YPT52	1.00	1.41	1.44	1.87	2.06	2.20	10.65	6.82	52.29	40.96	62.94	47.78	315.53
YKR015C	YKR015c	0.94	1.35	1.47	1.71	1.87	1.98	23.07	12.68	66.87	50.34	89.94	63.02	349.88
YKR016W	FCJ1	0.94	1.33	1.45	1.81	1.99	2.10	20.57	16.04	64.61	55.25	85.18	71.29	349.04
YKR017C	YKR017c	0.99	1.50	1.67	2.02	2.17	2.27	12.36	11.43	51.91	49.33	64.27	60.77	328.89
YKR018C	YKR018c	0.99	1.50	1.67	2.02	2.16	2.26	14.07	7.52	61.39	43.75	75.46	51.26	331.53
YKR019C	IRS4	0.87	0.97	1.09	1.45	1.63	1.81	1.02	0.72	17.98	4.97	19.00	5.70	310.98
YKR020W	VPS51	0.91	1.34	1.49	1.89	2.04	2.14	11.28	6.27	48.35	35.67	59.63	41.94	336.28
YKR021W	ALY1	0.98	1.44	1.56	1.95	2.12	2.25	12.89	5.65	54.66	32.34	67.55	37.99	329.19
YKR023W	YKR023w	0.91	1.07	1.26	1.71	1.90	2.07	4.29	0.84	41.53	11.07	45.82	11.91	307.75
YKR024C	DBP7	0.96	1.28	1.30	1.49	1.82	2.14	1.23	1.30	11.35	10.80	12.58	12.10	226.12
YKR026C		0.94	1.39	1.51	1.89	2.06	2.21	4.59	3.22	28.89	10.94	33.47	14.15	309.68
YKR026C	GCN3	0.97	1.15	1.25	1.60	1.84	2.03	3.31	3.65	34.58	30.67	37.89	34.32	273.57
YKR026C	GCN3	0.91	1.22	1.32	1.69	1.96	2.16	1.84	1.57	19.92	10.69	21.76	12.26	286.18
YKR027W	BCH2	0.89	1.02	1.17	1.67	1.93	2.12	0.74	2.01	4.00	2.83	4.74	4.84	254.12
YKR028W	SAP190	0.85	0.95	1.07	1.48	1.65	1.82	5.79	2.16	44.40	26.70	50.20	28.86	272.51
YKR029C	SET3	0.91	1.05	1.22	1.73	1.94	2.15	6.95	1.84	44.59	26.81	51.53	28.66	253.87
YKR030W	GMH1	0.97	1.42	1.54	1.94	2.10	2.23	9.04	4.51	47.04	29.20	56.07	33.71	318.10
YKR031C	SPO14	0.98	1.47	1.60	2.01	2.15	2.27	13.09	9.37	56.13	47.16	69.23	56.53	325.35
YKR032W	YKR032w	0.95	1.41	1.49	1.96	2.18	2.20	12.09	9.55	54.45	45.27	66.55	54.82	317.79
YKR033C	YKR033c	1.00	1.43	1.48	1.86	2.04	2.17	10.85	11.40	51.29	51.19	62.14	62.59	311.81
YKR034W	DAL80	0.92	1.11	1.35	1.85	2.03	2.19	3.81	1.28	37.72	17.23	41.53	18.52	274.98

ORF.name	Strain	Optical density at 600 nm at regular intervals (h)						GLUCOSE		FRUCTOSE		TOTAL SUGARS (g/l)		TOTAL AMINO ACIDS (mg/L)
		0	26	33	48	59	78	102 h	118 h	102 h	118 h	102 h	118 h	102 h
YKR035C	Unknown	0.91	1.29	1.31	1.52	1.64	1.71	23.43	16.32	70.31	62.58	93.74	78.90	366.80
YKR035W-A	DID2	1.00	1.47	1.69	2.05	2.16	2.23	8.89	5.52	51.44	40.38	60.33	45.89	343.49
YKR036C	CAF4	0.93	1.16	1.39	1.95	2.15	2.30	1.17	0.70	21.45	4.66	22.63	5.36	296.04
YKR039W	GAP1	0.86	1.00	1.17	1.69	1.88	2.06	9.76	1.66	54.32	21.85	64.09	23.51	312.20
YKR040C	YKR040c	0.89	1.05	1.23	1.73	1.97	2.17	0.87	0.54	15.10	1.90	15.97	2.43	287.76
YKR041W	YKR041w	1.05	1.31	1.54	2.02	2.18	2.32	18.30	1.12	69.06	20.38	87.37	21.50	342.12
YKR042W	UTH1	0.97	1.37	1.48	1.89	2.08	2.21	21.31	14.48	66.53	56.97	87.84	71.45	334.63
YKR043C	YKR043c	0.98	1.44	1.62	2.04	2.18	2.28	22.55	14.05	68.23	55.07	90.78	69.12	350.02
YKR044W	UIP5	0.96	1.49	1.65	1.97	2.11	2.21	15.81	11.63	60.45	51.11	76.26	62.75	336.74
YKR045C	YKR045c	0.95	1.38	1.52	1.88	2.03	2.13	16.78	6.84	60.98	39.76	77.76	46.60	338.24
YKR046C	PET10	0.96	1.18	1.39	1.86	2.03	2.19	11.49	1.85	58.17	28.17	69.66	30.02	317.80
YKR047W	YKR047w	1.01	1.46	1.62	2.08	2.23	2.33	15.32	7.48	58.25	40.73	73.57	48.21	325.67
YKR048C	NAP1	0.91	1.30	1.36	1.72	1.89	2.02	27.41	15.16	67.90	52.76	95.31	67.93	357.49
YKR049C	FMP46	0.94	1.40	1.52	1.91	2.07	2.19	8.53	3.51	46.85	20.42	55.38	23.93	315.15
YKR050W	TRK2	0.93	1.40	1.50	1.86	2.00	2.13	13.09	7.12	56.09	41.07	69.18	48.19	320.75
YKR051W	YKR051w	0.98	1.46	1.57	1.99	2.13	2.25	13.03	9.58	54.18	46.22	67.21	55.80	328.72
YKR052C	MRS4	0.93	1.32	1.42	1.93	2.09	2.21	9.00	5.72	48.50	34.63	57.50	40.35	308.14
YKR053C	YSR3	0.96	1.18	1.40	1.87	2.04	2.21	10.92	1.01	56.85	19.73	67.76	20.74	302.66
YKR054C	DYN1	0.99	1.42	1.49	1.89	2.05	2.18	18.37	13.41	65.76	56.56	84.12	69.97	327.15
YKR054C	DYN1	0.90	1.15	1.24	1.54	1.74	1.90	19.37	5.59	80.87	38.06	100.24	43.65	306.44
YKR055W	RHO4	1.03	1.48	1.67	1.98	2.10	2.17	5.78	3.19	35.67	11.88	41.46	15.07	338.29
YKR056W	TRM2	0.99	1.43	1.57	1.94	2.12	2.22	22.58	13.57	66.74	53.33	89.32	66.90	364.26
YKR057W	RPS21a	0.99	1.41	1.53	2.01	2.20	2.31	17.96	8.28	63.20	43.27	81.16	51.55	335.26
YKR058W	GLG1	0.96	1.43	1.57	1.94	2.09	2.21	11.65	5.10	52.61	33.25	64.26	38.35	325.36
YKR059W	TIF1	0.93	1.39	1.52	1.88	2.06	2.18	13.18	4.41	53.55	28.89	66.72	33.29	329.10
YKR060W	UTP30	1.09	1.55	1.71	2.11	2.25	2.35	12.57	4.49	55.77	30.84	68.34	35.33	327.82
YKR061W	KTR2	0.95	1.36	1.49	1.91	2.06	2.16	11.66	3.97	50.82	26.36	62.48	30.34	320.25
YKR064W	OAF3	0.98	1.47	1.63	2.04	2.17	2.27	12.76	5.05	55.05	33.39	67.81	38.44	323.64
YKR065C	PAM17	0.98	1.46	1.59	1.94	2.07	2.17	7.98	4.50	44.78	29.62	52.76	34.12	302.96
YKR066C	CCP1	0.98	1.45	1.64	1.98	2.13	2.23	15.84	9.12	57.13	46.62	72.97	55.74	317.34
YKR067W	GPT2	1.01	1.48	1.66	2.04	2.17	2.28	12.55	6.14	54.22	37.72	66.77	43.86	333.49
YKR069W	MET1	0.99	1.53	1.70	2.06	2.17	2.28	9.45	6.35	47.28	35.91	56.73	42.26	328.81
YKR070W	YKR070w	1.05	1.57	1.80	2.17	2.28	2.36	14.53	8.53	57.12	40.18	71.65	48.70	341.72
YKR072C	SIS2	0.94	1.43	1.59	1.93	2.06	2.16	19.83	9.76	68.09	43.78	87.92	53.54	349.42
YKR073C	YKR073c	0.97	1.44	1.62	1.98	2.12	2.23	15.78	8.02	59.51	44.21	75.30	52.23	345.59
YKR074W	AIM29	0.98	1.31	1.42	1.96	1.98	2.10	28.59	18.33	79.54	63.81	108.13	82.15	360.38
YKR075C	YKR075c	0.94	1.36	1.52	1.92	2.06	2.20	13.82	8.28	54.91	38.78	68.73	47.06	329.98
YKR076W	ECM4	0.92	1.33	1.52	1.97	2.12	2.24	9.42	3.68	47.35	21.82	56.77	25.50	322.80
YKR077W	MSA2	0.96	1.36	1.51	1.98	2.14	2.27	12.27	4.72	56.49	27.94	68.75	32.66	324.88
YKR078W	YKR078w	0.97	1.38	1.63	2.01	2.15	2.21	15.86	11.06	57.34	49.27	73.21	60.33	337.88
YKR080W	MTD1	1.00	1.47	1.65	2.01	2.17	2.26	24.78	17.08	72.57	60.14	97.35	77.22	360.35
YKR082W	NUP133	1.03	1.29	1.32	1.58	1.82	2.02	34.12	23.18	88.21	73.14	122.33	96.32	350.40
YKR084C	HBS1	0.97	1.35	1.49	1.85	2.01	2.15	24.42	18.50	66.34	63.78	90.75	82.27	357.03
YKR085C	MRPL20	0.89	1.10	1.06	0.95	0.95	0.92	119.44	121.00	141.39	109.76	260.83	230.77	474.00
YKR087C	OMA1	0.97	1.41	1.59	1.98	2.14	2.20	8.32	3.07	45.20	9.31	53.52	12.38	301.84
YKR088C	TVP38	0.96	1.40	1.54	1.90	2.07	2.15	9.02	3.05	48.27	10.58	57.29	13.63	315.81
YKR089C	TGL4	0.90	1.38	1.54	1.94	2.11	2.19	6.77	3.21	39.96	14.30	46.73	17.52	303.46
YKR090W	PXL1	0.96	1.36	1.55	1.96	2.12	2.20	9.44	3.70	48.67	21.97	58.11	25.67	307.01
YKR091W	SRL3	0.95	1.39	1.58	2.04	2.22	2.31	4.14	3.01	24.98	8.96	29.12	11.96	295.92
YKR091W	SRL3	0.90	1.26	1.51	1.88	2.05	2.18	2.98	0.94	31.81	9.18	34.79	10.12	277.80
YKR092C	SRP40	0.97	1.41	1.54	1.98	2.17	2.27	19.69	9.51	57.60	44.22	77.28	53.73	353.67
YKR093W	PTR2	1.04	1.57	1.70	2.20	2.17	2.27	8.90	3.21	47.13	14.62	56.03	17.83	295.73
YKR094C	RPL40b	0.98	1.17	1.33	1.81	1.95	1.95	23.54	7.48	74.41	49.58	97.95	57.06	367.14
YKR095W	MLP1	0.90	1.07	1.26	1.74	1.96	2.15	1.03	0.75	16.15	2.36	17.18	3.11	279.82
YKR096W	YKR096w	0.89	1.04	1.20	1.61	1.87	2.07	1.02	0.77	14.55	3.52	15.57	4.30	270.13
YKR097W	PCK1	0.96	1.43	1.57	1.96	2.10	2.21	7.19	2.98	43.05	8.40	50.24	11.38	296.54
YKR098C	UBP11	1.04	1.59	1.76	2.11	2.23	2.30	10.42	3.07	53.02	11.73	63.44	14.80	312.21
YKR099C-A	YKR099C-A	0.94	1.16	1.31	1.75	2.05	2.22	6.25	1.58	50.33	17.59	56.58	19.17	262.16
YKR099W	BAS1	1.05	1.55	1.64	2.02	2.22	2.35	5.74	2.88	37.50	5.70	43.24	8.58	317.80
YKR100C	SKG1	0.96	1.41	1.56	1.94	2.09	2.18	9.53	3.10	46.09	10.31	55.62	13.41	304.96
YKR100C	SKG1	0.87	1.14	1.29	1.67	1.85	2.04	7.45	1.30	50.06	15.30	57.51	16.60	295.01
YKR101W	SIR1	0.96	1.43	1.57	2.05	2.24	2.38	3.30	2.99	13.30	3.42	16.60	6.41	250.72
YKR102W	FLO10	0.91	1.12	1.33	1.78	2.01	2.19	0.81	0.84	8.32	0.69	9.12	1.52	289.67
YKR103W	NFT1	0.97	1.47	1.63	2.02	2.18	2.26	8.62	2.98	50.15	12.74	58.77	15.72	306.49
YKR104W	YKR104w	1.03	1.47	1.66	2.06	2.22	2.28	12.48	3.72	54.66	21.90	67.13	25.62	321.87
YKR105C	VBA5	0.94	1.38	1.54	1.96	2.15	2.23	12.53	4.19	51.93	29.10	64.46	33.30	340.07
YKR106W	YKR106w	0.95	1.14	1.34	1.87	2.05	2.20	4.37	0.88	42.49	5.93	46.85	6.82	302.73
YLL001W	DNM1	0.88	1.13	1.36	1.69	1.85	2.06	4.95	2.59	34.02	21.39	38.98	23.98	177.42
YLL002W	RTT109	0.94	1.03	1.04	0.93	1.07	1.32	64.42	42.67	103.18	87.83	167.60	130.50	390.27
YLL005C	SPO75	0.87	1.09	1.32	1.64	1.79	2.02	7.46	0.82	45.36	3.83	52.82	4.65	217.40
YLL006W	MMM1	0.90	1.30	1.47	1.92	2.18	2.34	0.93	1.01	9.69	1.96	10.62	2.97	260.85
YLL006W	MMM1	0.91	1.10	1.09	1.12	1.40	1.55	31.81	22.98	73.14	76.04	104.95	99.03	287.12
YLL006W-A	YLL006w-a	0.87	1.07	1.21	1.65	1.91	2.10	17.97	8.68	69.62	40.04	87.59	48.73	308.66
YLL007C	YLL007c	1.00	1.48	1.64	2.00	2.18	2.31	3.17	3.14	13.21	2.27	16.37	5.41	297.33
YLL009C	COX17	0.90	1.22	1.47	1.83	1.97	2.17	1.95	1.20	19.19	0.81	21.14	2.01	261.13
YLL010C	PSR1	0.89	1.10	1.28	1.60	1.75	1.96	3.19	1.13	30.02	2.36	33.22	3.49	192.13
YLL012W	YEH1	0.91	1.21	1.42	1.74	1.87	2.09	2.55	1.17	24.63	1.08	27.18	2.25	160.15
YLL013C	PUF3	0.93	1.14	1.32	1.63	1.78	2.01	5.30	1.20	41.36	1.72	46.66	2.92	251.84
YLL014W	EMC6	0.90	1.14	1.37	1.70	1.85	2.07	2.29	1.19	22.12	1.00	24.41	2.19	239.96
YLL015W	BPT1	0.89	1.16	1.38	1.72	1.85	2.06	2.23	1.37	24.53	2.03	26.76	3.40	224.91
YLL016W	SDC25	0.91	1.13	1.33	1.65	1.80	2.02	2.74	2.02	26.43	19.06	29.18	21.07	178.12
YLL017W	YLL017w	0.91	1.19	1.39	1.74	1.91	2.13	1.35	1.05	9.74	2.05	11.09	3.10	206.48
YLL018C-A	COX19	0.96	1.34	1.47	1.94	2.15	2.24	16.06	10.79	57.68	50.12	73.74	60.91	317.37
YLL019C	KNS1	0.87	1.28	1.45	1.89	2.10	2.24	14.40	4.55	63.20	38.87	77.60	43.42	313.70
YLL020C	YLL020c	0.96	1.22	1.46	1.81	1.98	2.20	2.74	1.40	24.78	7.19	27.52	8.59	258.04
YLL021W	SPA2	0.95	1.32	1.58	1.90	2.03	2.21	1.54	1.22	6.94	4.73	8.48	5.94	187.80
YLL023C	POM33	0.91	1.20	1.43	1.79	1.93	2.13	1.53	1.12	8.13	1.70	9.65	2.82	157.38
YLL024C	SSA2	0.92	1.21	1.44	1.82	1.98	2.19	1.37	1.15	4.79	-0.48	6.15	0.67	124.08
YLL025W	PAU17	0.91	1.20	1.44	1.82	1.97	2.18	1.33	1.11	5.97	-0.38	7.30	0.73	179.84
YLL026W	HSP104	0.96	1.25	1.53	1.89	2.04	2.23	1.41	1.21	9.29	0.13	10.70	1.34	183.95
YLL027W	ISA1	0.94	1.15	1.21	1.58	1.84	1.97	13.72	5.09	65.60	45.43	79.33	50.53	297.07
YLL027W	ISA1	0.85	1.06	1.04	1.15	1.42	1.61	14.55	4.98	59.61	34.63	74.16	39.61	290.61
YLL028W	TPO1	0.87	1.09	1.31	1.68	1.84	2.06	1.81	1.15	15.11	0.46	16.92	1.61	174.43
YLL029W	FRA1	0.92	1.19	1.42	1.73	1.86	2.05	3.70	1.45	31.91	10.24	35.61	11.69	210.41
YLL030C	YLL030c	0.98	1.46	1.69	2.06	2.20	2.31	5.37	3.45	32.19	14.95	37.56	18.40	278.62
YLL032C	YLL032c	0.91	1.15	1.39	1.75	1.90	2.11	1.76	1.17	11.13	3.35	12.89	4.52	135.24
YLL033W	IRC19	0.91	1.08	1.06	0.95	0.94	0.92	123.58	127.72	114.16	144.40	237.74	272.13	506.65
YLL038C	ENT4	0.88	1.05	1.26	1.64	1.82	2.05	1.35	1.09	0.44	2.28	1.79	3.38	153.84
YLL039C	UBI4	0.91	1.26	1.39	1.82	2.01	2.15	7.16	2.88	64.86	45.14	72.02	48.02	326.27
YLL039C	UBI4	0.92	1.22	1.33	1.71	1.96	2.06	5.42	1.57	55.77	29.84	61.19	31.41	296.17
YLL039C	UBI4	0.95	1.19	1.34	1.63	2.01	1.87	3.35	1.72	43.86	27.58	47.21	29.30	306.73
YLL040C	VPS13	0.99	1.22	1.43	1.83	1.98	2.18	1.08	1.74	8.09	18.65	9.17	20.39	172.62
YLL041C	SDH2	1.01	1.39	1.67	2.05	2.17	2.36	3.81	3.62	29.19	29.83	33.00	33.46	154.52
YLL042C	ATG10	1.05	1.42	1.69	2.07	2.18	2.34	11.42	21.17	57.13	66.12	68.54	87.28	126.60
YLL043W	FPS1	0.99	1.25	1.44	1.79	1.94	2.16	1.54	10.07	20.63	52.06	22.16	62.13	130.03
YLL044W	Unknown	0.90	1.36	1.58	1.95	2.09	2.19	11.38	5.29	49.96	30.60	61.35	35.89	313.50
YLL045C	RPL8b	1.07	1.38	1.62	2.01	2.16	2.35	0.94	3.12	8.07	17.99	9.01	21.10	128.58
YLL046C	RNP1	0.98	1.30	1.54	1.92	2.07	2.27	0.88	5.57	6.07	35.87	6.95	41.44	154.06
YLL047W	Unknown	0.96	1.15	1.29	1.66	1.81	2.04	1.03	1.10	13.13	12.16	14.16	13.27	152.42
YLL048C	YBT1	0.85	1.27	1.41	1.76	1.94	2.08	9.22	3.71	45.04	20.64	54.26	24.35	323.16
YLL049W	LDB18	0.88	1.27	1.37	1.65	1.83	1.97	13.88	6.25	55.17	36.18	69.05	42.43	317.99
YLL051C	FRE6	0.98	1.24	1.45	1.93	2.29	2.45	0.84	3.56	2.40	26.74	3.24	30.31	179.94
YLL052C	AQY2	0.94	1.18	1.37	1.77	1.95	2.16	1.45	12.99	14.03	55.05	15.47	68.04	127.96
YLL053C	YLL053c	0.95	1.18	1.36	1.73	1.92	2.12	1.11	2.84	6.53	25.87	7.64	28.71	64.06
YLL054C	YLL054c	1.05	1.21	1.40	1.92	2.12	2.33	1.25	2.16	12.67	26.08	13.92	28.24	122.13
YLL055W	YCT1	1.02	1.29	1.52	1.89	2.06	2.26	1.45	1.88	14.05	17.23	15.49	19.11	136.82
YLL056C	YLL056c	1.02	1.27	1.47	1.82	1.97	2.19	3.56	1.92	34.24	16.20	37.80	18.12	209.32
YLL057C	JLP1	0.99	1.24	1.42	1.79	1.94	2.19	1.26	1.81	11.10	14.20	12.36	16.02	154.49
YLL058W	YLL058w	0.93	1.16	1.35	1.73	1.89	2.12	3.09	1.65	14.42	14.20	17.50	15.85	158.20
YLL059C	YLL059c	0.91	1.38	1.62	1.98	2.13	2.22	5.27	3.42	30.87	16.69	36.14	20.11	290.67
YLL060C	GTT2	0.94	1.13	1.32	1.69	1.86	2.10	1.40	1.16	4.18	9.43	5.58	10.59	143.04
YLL061W	MMP1	1.02	1.27	1.55	1.81	1.87	2.00	1.19	2.42	7.27	20.76	8.46	23.18	154.36
YLL062C	MHT1	0.94	1.19	1.36	1.74	1.90	2.13	0.96	1.01	3.27	7.47	4.23	8.47	133.07
YLL063C	AYT1	0.98	1.24	1.46	1.83	1.99	2.26	1.53	3.05	16.38	25.95	17.91	29.00	191.83
YLR001C	YLR001c	0.93	1.16	1.33	1.68	1.83	2.05	1.25	2.36	5.78	21.39	7.03	23.75	144.95
YLR003C	CMS1	1.04	1.35	1.60	1.97	2.15	2.32	1.14	4.44	5.74	28.70	6.88	33.14	175.07
YLR004C	THI73	0.99	1.28	1.46	1.82	1.99	2.19	1.31	2.31	6.38	23.77	7.68	26.08	116.58
YLR006C	SSK1	0.94	1.10	1.15	1.43	1.64	1.86	22.25	12.49	71.69	58.93	93.94	71.43	338.01
YLR011W	LOT6	1.00	1.16	1.32	1.77	1.97	2.18	1.85	3.83	19.97	32.04	21.82	35.88	145.37
YLR012C	YLR012c	1.01	1.34	1.60	1.93	2.08	2.28	1.60	2.23	21.00	24.53	22.60	26.76	166.59
YLR013W	GAT3	0.97	1.24	1.43	1.83	1.96	2.19	1.66	1.63	18.71	13.66	20.36	15.29	173.79
YLR014C	PPR1	1.00	1.16	1.31	1.62	1.81	2.01	3.18	3.49	30.24	30.53	33.42	34.02	183.06
YLR015W	BRE2	0.99	1.26	1.47	1.74	1.90	2.09	1.68	2.30	14.73	20.38	16.40	22.67	177.22
YLR016C	PML1	0.97	1.25	1.45	1.84	1.98	2.18	1.56	1.70	13.85	14.38	15.41	16.08	173.82

ORF.name	Strain	Optical density at 600 nm at regular intervals (h)						GLUCOSE		FRUCTOSE		TOTAL SUGARS (g/l)		TOTAL AMINO ACIDS (mg/L)
		0	26	33	48	59	78	102 h	118 h	102 h	118 h	102 h	118 h	102 h
YLR017W	MEU1	1.09	1.42	1.61	1.97	2.11	2.28	1.29	2.52	12.61	21.64	13.90	24.16	148.84
YLR018C	POM34	0.98	1.23	1.44	1.82	1.99	2.19	1.14	1.48	10.44	15.50	11.57	16.98	164.75
YLR019W	PSR2	0.99	1.36	1.59	1.95	2.08	2.28	1.01	1.22	5.50	11.35	6.51	12.57	132.61
YLR020C	YEH2	1.02	1.34	1.54	1.92	2.06	2.24	1.90	6.45	22.51	40.16	24.41	46.60	140.93
YLR021W	IRC25	1.02	1.36	1.58	1.96	2.10	2.29	0.97	3.32	7.33	25.37	8.30	28.68	200.61
YLR023C	IZH3	1.08	1.48	1.72	2.02	2.21	2.36	1.39	1.14	-1.60	1.51	-0.21	2.64	121.68
YLR024C	UBR2	1.05	1.29	1.48	1.84	2.04	2.27	1.04	1.18	9.43	7.64	10.47	8.82	193.97
YLR025W	SNF7	1.01	1.30	1.50	1.78	1.89	2.12	3.63	1.31	50.22	23.89	53.85	25.20	325.44
YLR027C	AAT2	0.84	1.03	1.03	1.14	1.42	1.61	11.53	7.57	56.19	57.81	67.72	65.38	293.26
YLR028C	ADE16	1.02	1.34	1.56	1.87	2.01	2.22	6.04	4.61	37.01	31.33	43.05	35.94	204.13
YLR030W	YLR030w	0.88	1.31	1.51	1.93	2.12	2.23	3.44	3.05	17.04	4.29	20.49	7.34	295.21
YLR031W	YLR031w	0.93	1.33	1.55	1.96	2.12	2.22	17.31	5.40	60.59	34.29	77.89	39.68	341.75
YLR032W	RAD5	0.90	1.33	1.46	1.91	2.09	2.21	9.24	3.62	44.12	18.98	53.37	22.61	342.75
YLR034C	SMF3	0.95	1.51	1.67	2.05	2.17	2.25	15.09	5.13	53.98	29.74	69.07	34.88	330.32
YLR035C	MLH2	1.01	1.52	1.71	2.12	2.27	2.35	17.49	5.88	59.37	35.58	76.86	41.47	358.32
YLR036C	YLR036c	0.94	1.42	1.55	1.92	2.09	2.20	17.85	5.86	60.55	35.38	78.40	41.24	350.21
YLR037C	PAU23	0.92	1.41	1.52	1.89	2.06	2.17	8.88	3.65	43.93	21.24	52.82	24.89	321.06
YLR038C	COX12	0.96	1.37	1.53	1.93	2.11	2.23	3.72	3.16	21.67	11.13	25.39	14.29	274.24
YLR039C	RIC1	0.87	1.29	1.43	1.76	1.92	2.02	17.85	8.17	55.79	41.58	73.64	49.75	344.13
YLR040C	YLR040c	0.90	1.33	1.46	1.82	2.01	2.12	11.33	5.27	50.54	34.03	61.87	39.30	323.85
YLR041W	YLR041w	0.90	1.32	1.48	1.81	1.99	2.10	8.27	3.13	41.60	14.70	49.88	17.83	314.48
YLR042C	YLR042c	1.09	1.47	1.70	2.06	2.18	2.34	3.29	3.09	31.71	26.08	35.00	29.17	242.34
YLR043C	TRX1	1.00	1.24	1.38	1.64	1.81	2.04	1.01	1.13	0.63	-0.20	1.64	0.93	199.41
YLR044C	PDC1	0.94	1.11	1.26	1.79	1.77	2.07	1.45	1.91	12.26	16.34	13.71	18.25	183.92
YLR046C	YLR046c	0.94	1.18	1.35	1.68	1.81	2.02	1.89	2.32	19.50	20.51	21.39	22.83	174.64
YLR047C	FRE8	1.00	1.30	1.44	1.72	1.83	2.04	1.47	1.47	14.38	14.57	15.84	16.04	182.48
YLR048W	RPS0b	0.99	1.12	1.22	1.68	1.96	2.24	1.22	3.01	7.39	10.05	8.60	13.05	212.72
YLR049C	YLR049c	1.00	1.38	1.63	2.01	2.18	2.37	0.88	1.12	-1.60	-2.26	-0.72	-1.14	139.65
YLR050C	YLR050c	0.93	1.40	1.62	2.00	2.15	2.22	11.02	5.32	46.92	33.06	57.95	38.38	323.80
YLR052W	IES3	0.87	1.26	1.40	1.79	1.97	2.05	16.18	11.38	55.15	49.52	71.33	60.90	342.94
YLR053C	YLR053c	0.95	1.22	1.43	1.84	2.01	2.22	1.02	1.06	-0.07	2.98	0.95	4.04	150.67
YLR054C	OSW2	0.98	1.23	1.47	1.92	2.08	2.26	4.91	1.98	36.92	20.20	41.82	22.18	209.64
YLR054C	OSW2	0.96	1.28	1.46	1.86	2.03	2.18	9.57	1.90	56.45	21.11	66.02	23.02	303.16
YLR055C	SPT8	1.02	1.15	1.30	1.68	1.88	2.16	18.12	13.86	74.56	61.52	92.68	75.37	314.08
YLR056W	ERG3	0.98	1.16	1.31	1.52	1.60	1.75	25.70	18.42	74.04	59.73	99.73	78.15	366.29
YLR057W	YLR057w	0.96	1.21	1.44	1.80	1.96	2.17	3.46	2.08	31.73	21.81	35.19	23.90	232.42
YLR058C	SHM2	0.89	1.11	1.14	1.30	1.54	1.77	20.31	9.57	61.61	54.68	81.93	64.25	302.13
YLR059C	REX2	0.99	1.29	1.49	1.88	2.04	2.27	0.89	1.02	0.51	-0.49	1.41	0.53	158.28
YLR061W	RPL22a	1.00	1.09	1.18	1.55	1.76	2.04	1.06	0.93	-0.03	-1.52	1.03	-0.60	261.40
YLR062C	BUD28	1.00	1.09	1.14	1.49	1.70	1.79	1.03	1.10	-0.11	-2.44	0.93	-1.33	177.56
YLR063W	YLR063w	0.99	1.31	1.56	1.97	2.10	2.33	1.01	1.19	2.61	1.64	3.63	2.83	156.86
YLR064W	PER33	0.93	1.14	1.31	1.72	1.88	2.09	1.90	1.66	18.55	16.94	20.45	18.60	194.97
YLR065C	YLR065c	0.91	1.03	1.11	1.45	1.63	1.87	1.96	2.84	23.23	29.38	25.19	32.23	188.17
YLR067C	PET309	0.88	1.05	1.03	0.91	0.91	0.88	121.57	127.81	115.57	138.63	237.14	266.44	513.32
YLR068W	FYV7	0.97	1.13	1.31	1.77	1.95	2.16	15.67	4.97	61.94	37.95	77.61	42.91	304.28
YLR069C	MEF1	0.87	1.02	1.02	0.90	0.92	0.97	108.66	113.11	112.03	137.85	220.69	250.97	472.66
YLR070C	XYL2	1.05	1.45	1.70	2.04	2.15	2.34	7.03	1.09	49.75	8.84	56.78	9.94	306.34
YLR072W	YLR072w	0.98	1.34	1.61	1.95	2.08	2.25	2.51	1.10	25.15	10.59	27.66	11.69	286.21
YLR073C	RFU1	1.02	1.32	1.52	1.84	1.99	2.18	2.50	1.91	23.72	20.84	26.21	22.75	274.35
YLR074C	BUD20	0.99	1.14	1.26	1.64	1.89	2.17	11.92	9.13	58.87	50.43	70.80	59.56	281.45
YLR077W	FMP25	1.04	1.34	1.57	1.94	2.08	2.27	2.54	1.16	16.32	5.87	18.86	7.04	183.56
YLR079W	SIC1	1.02	1.17	1.31	1.62	1.80	2.04	0.97	1.01	7.89	-0.26	8.87	0.75	249.36
YLR080W	EMP46	0.98	1.19	1.37	1.77	1.94	2.13	1.60	1.47	14.59	14.96	16.19	16.43	184.24
YLR081W	GAL2	0.91	1.08	1.27	1.69	1.88	2.08	1.55	1.32	15.97	11.43	17.52	12.74	179.01
YLR082C	SRL2	0.95	1.23	1.43	1.83	2.03	2.27	0.96	1.24	-0.51	-1.58	0.45	-0.34	193.10
YLR083C	EMP70	0.91	1.17	1.35	1.74	1.93	2.16	1.06	0.95	0.98	0.38	2.04	1.33	180.88
YLR084C	RAX2	0.95	1.16	1.35	1.80	1.99	2.22	9.04	1.24	55.22	6.59	64.26	7.83	309.26
YLR084C	RAX2	0.93	1.25	1.43	1.83	2.04	2.18	3.43	0.92	33.56	5.89	36.99	6.81	281.57
YLR085C	ARP6	0.96	1.11	1.26	1.65	1.84	2.09	55.55	30.77	102.83	76.33	158.38	107.10	376.47
YLR087C	CSF1	0.96	1.19	1.40	1.79	1.91	2.11	21.38	3.11	66.80	23.52	88.18	26.63	342.07
YLR089C	ALT1	0.97	1.13	1.25	1.66	1.87	2.14	3.71	1.16	33.11	9.13	36.82	10.29	319.90
YLR090W	XDJ1	1.00	1.29	1.55	1.90	2.06	2.25	3.21	1.48	29.99	16.34	33.20	17.82	208.79
YLR091W	GEP5	0.92	1.08	1.13	1.03	1.10	1.05	124.51	124.18	126.15	143.68	250.66	267.86	505.02
YLR092W	SUL2	1.10	1.43	1.65	1.97	2.12	2.30	1.15	1.23	11.66	10.92	12.81	12.15	277.47
YLR093C	NYV1	0.97	1.27	1.48	1.85	1.99	2.18	1.53	1.08	10.24	7.80	11.77	8.88	274.43
YLR094C	GIS3	1.03	1.37	1.58	2.11	2.14	2.25	1.28	1.52	9.23	16.61	10.51	18.13	272.50
YLR095C	IOC2	1.00	1.33	1.51	2.28	2.09	2.18	0.95	0.93	-1.64	-2.63	-0.69	-1.70	202.39
YLR096W	KIN2	0.96	1.21	1.40	1.78	1.95	2.16	1.22	1.28	9.58	10.80	10.80	12.09	217.13
YLR097C	HRT3	0.93	1.22	1.38	1.75	1.91	2.15	2.44	1.19	22.86	7.04	25.31	8.23	292.77
YLR098C	CHA4	0.96	1.19	1.40	1.82	2.00	2.21	16.77	1.38	59.69	12.05	76.46	13.43	341.24
YLR099C	ICT1	1.01	1.39	1.66	2.01	2.15	2.33	18.86	1.66	66.89	12.26	85.75	13.92	338.94
YLR102C	APC9	1.06	1.33	1.56	1.97	2.12	2.33	19.45	2.55	69.18	24.90	88.63	27.45	333.56
YLR104W	YLR104w	1.01	1.30	1.56	1.98	2.13	2.31	10.38	2.43	53.05	25.64	63.43	28.07	311.82
YLR107W	REX3	0.96	1.18	1.37	1.68	1.86	2.09	4.55	2.31	41.91	23.04	46.46	25.34	289.61
YLR108C	YLR108c	1.00	1.23	1.44	1.84	2.02	2.24	2.42	1.71	25.58	19.64	28.00	21.35	286.48
YLR109W	AHP1	0.99	1.21	1.44	1.80	2.00	1.99	3.88	4.84	34.61	36.04	38.48	40.88	281.46
YLR110C	CCW12	0.88	1.00	1.15	1.55	1.81	2.01	3.88	0.93	38.80	11.27	42.69	12.20	304.94
YLR111W	YLR111w	0.99	1.25	1.44	1.87	2.08	2.28	4.35	3.90	34.32	33.48	38.67	37.38	278.36
YLR112W	YLR112w	1.03	1.28	1.47	1.78	1.99	2.17	2.56	2.71	24.06	26.71	26.62	29.41	277.21
YLR113W	HOG1	1.01	1.08	1.06	1.07	1.07	1.16	159.38	149.81	132.79	124.11	292.16	273.92	528.23
YLR114C	AVL9	0.94	1.08	1.08	0.94	0.95	0.91	130.84	129.11	124.58	138.23	255.41	267.35	511.25
YLR118C	YLR118c	0.98	1.18	1.40	1.85	1.97	2.16	26.77	16.97	73.59	66.64	100.37	83.61	336.77
YLR118C	YLR118c	0.91	1.21	1.38	1.78	1.99	2.14	12.07	1.07	60.83	12.23	72.89	13.30	315.57
YLR119W	SRN2	0.98	0.98	1.44	1.78	1.94	2.15	1.58	1.53	-1.45	-1.42	0.13	0.12	314.46
YLR120C	YPS1	1.09	1.09	1.75	2.10	2.23	2.36	1.51	1.50	-1.45	-1.48	0.07	0.02	304.26
YLR121C	YPS3	1.01	1.01	1.62	1.99	2.16	2.26	1.20	1.46	-0.15	-1.34	1.05	0.12	269.43
YLR122C	YLR122c	0.99	0.99	1.50	1.86	2.01	2.19	1.65	1.59	0.53	-1.52	2.18	0.07	306.82
YLR123C	YLR123c	1.03	1.03	1.58	2.01	2.17	2.35	1.39	1.33	0.97	-1.31	2.36	0.02	268.31
YLR124W	YLR124w	0.95	0.95	1.51	1.85	2.00	2.18	1.51	1.81	0.87	-1.49	2.38	0.32	331.18
YLR125W	YLR125w	0.94	0.94	1.37	1.77	1.96	2.18	1.39	1.21	1.17	-0.81	2.56	0.40	274.76
YLR125W	YLR125w	0.92	1.19	1.34	1.69	1.91	2.04	13.90	0.99	60.30	7.70	74.20	8.68	316.13
YLR126C	YLR126c	1.00	1.32	1.54	2.01	2.18	2.27	3.52	2.48	41.78	30.17	45.30	32.65	293.38
YLR128W	DCN1	0.94	1.23	1.42	1.91	2.11	2.22	2.94	3.67	35.74	37.87	38.68	41.54	281.96
YLR130C	ZRT2	0.98	1.25	1.46	2.01	2.23	2.36	1.18	0.86	7.55	8.57	8.73	9.43	245.00
YLR131C	ACE2	0.96	1.05	1.05	1.32	1.53	1.71	17.94	19.40	72.20	74.21	90.14	93.61	308.39
YLR133W	CKI1	0.96	1.20	1.37	2.06	2.09	2.19	10.10	5.56	57.84	42.98	67.93	48.54	314.98
YLR134W	PDC5	0.85	1.01	1.12	1.77	2.00	2.11	5.72	1.27	47.93	13.45	53.65	14.72	297.81
YLR135W	SLX4	0.95	1.20	1.33	1.76	1.97	2.06	1.87	0.98	27.77	6.37	29.64	7.35	284.08
YLR136C	TIS11	0.93	1.17	1.26	1.69	1.86	1.96	3.49	1.47	37.34	20.45	40.83	21.91	292.09
YLR137W	YLR137w	0.98	1.28	1.49	2.01	2.19	2.31	1.20	1.17	12.55	11.77	13.75	12.94	269.43
YLR138W	NHA1	1.06	1.43	1.67	2.21	2.33	2.31	3.10	2.41	37.41	29.65	40.51	32.07	266.95
YLR139C	SLS1	0.95	1.05	1.03	1.24	1.44	1.57	14.06	11.17	68.55	55.08	82.61	66.25	252.91
YLR142W	PUT1	0.94	1.22	1.40	1.94	2.13	2.23	1.06	1.14	4.41	7.70	5.47	8.84	236.48
YLR143W	YLR143w	0.96	1.16	1.26	1.73	1.96	2.08	14.64	12.69	72.42	62.09	87.06	74.78	308.78
YLR144C	ACF2	0.93	1.15	1.28	1.71	1.93	2.05	2.94	2.49	36.13	31.87	39.07	34.36	289.02
YLR146C	SPE4	1.02	1.50	1.74	2.11	2.26	2.35	24.13	5.69	79.05	45.26	103.18	50.95	345.65
YLR148W	PEP3	0.91	1.09	1.06	0.95	0.95	0.92	126.23	121.31	146.89	107.52	273.12	228.83	476.06
YLR149C	YLR149c	0.93	1.11	1.27	1.78	1.96	2.12	6.62	0.85	48.63	11.77	55.25	12.62	300.43
YLR150W	STM1	1.03	1.30	1.52	1.98	2.17	2.31	2.01	0.94	32.35	5.95	34.37	6.89	272.40
YLR151C	PCD1	0.86	0.99	1.08	1.71	1.96	2.12	1.39	0.85	25.47	6.86	26.86	7.70	284.56
YLR152C	YLR152c	0.98	1.28	1.47	1.99	2.16	2.28	2.59	1.24	33.26	15.63	35.85	16.87	294.88
YLR154C	RNH203	1.00	1.28	1.48	2.03	2.21	2.31	5.11	4.71	46.27	42.05	51.38	46.76	298.21
YLR164W	YLR164w	1.00	1.24	1.43	2.00	2.21	2.34	1.02	3.08	14.38	12.44	15.40	15.53	280.30
YLR165C	PUS5	1.02	1.36	1.60	2.04	2.23	2.36	4.84	1.11	40.92	12.99	45.76	14.10	316.97
YLR168C	UPS2	0.98	1.28	1.45	1.99	2.18	2.29	5.95	3.26	43.21	30.66	49.17	33.92	322.91
YLR169W	YLR169w	1.04	1.28	1.45	1.97	2.19	2.33	9.94	1.95	54.83	28.69	64.77	30.64	329.01
YLR170C	APS1	0.98	1.22	1.39	1.95	2.16	2.30	15.84	5.74	66.14	46.58	81.98	52.32	340.85
YLR171W	YLR171w	0.98	1.22	1.38	1.90	2.13	2.28	7.29	2.01	50.61	28.68	57.90	30.69	317.65
YLR172C	DPH5	1.01	1.18	1.30	1.91	2.17	2.32	10.92	3.72	55.96	34.38	66.88	38.10	309.62
YLR173W	YLR173w	0.99	1.21	1.38	1.88	2.06	2.20	4.64	0.86	44.15	12.29	48.79	13.14	298.44
YLR174W	IDP2	0.98	1.20	1.38	1.86	2.06	2.21	3.24	1.01	37.51	9.44	40.76	10.46	298.41
YLR176C	RFX1	1.04	1.33	1.57	2.08	2.24	2.36	1.25	0.93	18.25	4.46	19.50	5.39	286.05
YLR177W	YLR177w	0.97	1.29	1.49	1.96	2.14	2.26	1.41	1.00	22.30	11.48	23.71	12.48	279.90
YLR178C	TFS1	1.06	1.35	1.56	2.03	2.25	2.38	1.60	1.49	21.52	17.87	23.12	19.37	275.84
YLR179C	YLR179c	0.97	1.25	1.44	1.92	2.12	2.27	4.21	1.83	39.65	25.04	43.86	26.87	296.78
YLR180W	SAM1	1.01	1.28	1.46	1.95	2.17	2.31	3.13	1.48	37.96	23.49	41.09	24.97	307.30
YLR181C	VTA1	1.00	1.27	1.43	1.87	2.08	2.23	5.78	2.94	46.47	31.94	52.25	34.87	329.09
YLR182W	SWI6	1.00	1.18	1.21	1.69	1.98	2.21	24.73	15.91	78.09	65.98	102.82	81.89	336.87
YLR183C	TOS4	0.98	1.29	1.45	1.96	2.17	2.30	8.20	5.82	51.57	41.89	59.78	47.71	309.67
YLR184W	YLR184w	0.98	1.12	1.19	1.63	1.96	2.17	16.27	5.09	66.66	42.44	82.92	47.52	310.18
YLR185W	RPL37a	1.04	1.22	1.34	1.91	2.14	2.31	1.54	1.08	22.23	5.12	23.77	6.20	260.16
YLR187W	SKG3	1.00	1.21	1.37	1.85	2.08	2.23	1.23	0.81	20.17	4.13	21.40	4.94	284.46
YLR188W	MDL1	1.04	1.28	1.48	1.96	2.13	2.25	7.41	1.46	55.34	23.33	62.74	24.80	308.48
YLR189C	ATG26	1.07	1.44	1.67	2.11	2.27	2.40	0.84	0.86	8.81	2.55	9.65	3.40	278.75

ORF.name	Strain	Optical density at 600 nm at regular intervals (h)						GLUCOSE		FRUCTOSE		TOTAL SUGARS (g/l)		TOTAL AMINO ACIDS (mg/L)
		0	26	33	48	59	78	102 h	118 h	102 h	118 h	102 h	118 h	102 h
YLR190W	MMR1	0.96	1.20	1.34	1.75	1.96	2.09	5.00	2.95	46.23	36.82	51.23	39.78	337.68
YLR191W	PEX13	1.04	1.32	1.51	2.03	2.22	2.32	4.92	3.71	44.38	37.74	49.29	41.45	272.02
YLR192C	HCR1	0.92	1.09	1.26	1.76	1.97	2.16	1.42	1.06	21.47	9.42	22.88	10.48	265.75
YLR193C	UPS1	1.07	1.44	1.64	2.03	2.20	2.25	11.29	8.70	60.55	53.50	71.84	62.20	341.42
YLR194C	YLR194c	0.98	1.24	1.45	1.99	2.20	2.34	5.97	1.86	45.12	25.47	51.10	27.34	322.81
YLR194C	YLR194c	0.92	1.21	1.37	1.80	1.99	2.14	8.80	2.35	57.65	24.53	66.45	26.88	277.42
YLR199C	PBA1	0.97	1.25	1.43	1.91	2.12	2.23	16.81	10.92	66.27	54.99	83.07	65.91	332.81
YLR200W	YKE2	1.02	1.27	1.46	2.02	2.20	2.32	18.99	5.97	72.56	50.12	91.55	56.09	337.80
YLR201C	COQ9	0.90	1.17	1.16	0.97	0.97	0.92	132.77	128.34	132.03	123.47	264.79	251.81	528.84
YLR202C	YLR202c	0.87	1.08	1.11	0.92	0.93	0.88	124.81	123.95	130.85	126.20	255.66	250.15	531.03
YLR203C	MSS51	0.98	1.19	1.17	1.06	1.08	1.07	120.44	120.85	132.79	128.19	253.23	249.04	520.11
YLR204W	QRI5	0.89	1.05	1.06	0.92	0.92	0.89	121.79	117.86	132.84	131.84	254.63	249.70	513.39
YLR205C	HMX1	1.01	1.24	1.43	1.96	2.13	2.27	13.69	1.92	63.57	26.87	77.26	28.79	328.94
YLR206W	ENT2	0.93	1.15	1.31	1.79	2.00	2.16	1.15	0.95	12.62	2.98	13.77	3.93	275.62
YLR207W	HRD3	0.98	1.27	1.46	1.85	2.05	2.21	1.03	1.04	9.23	3.60	10.26	4.63	275.19
YLR209C	PNP1	1.02	1.30	1.50	2.03	2.22	2.35	1.28	1.48	18.31	10.15	19.59	11.63	281.87
YLR210W	CLB4	0.96	1.25	1.48	1.96	2.14	2.26	1.38	1.15	16.62	14.05	18.01	15.21	298.66
YLR211C	YLR211c	0.96	1.25	1.44	1.98	2.18	2.29	9.67	3.62	59.50	38.75	69.17	42.37	323.93
YLR211C	YLR211c	0.90	1.19	1.37	1.78	1.95	2.08	8.17	2.04	52.00	21.54	60.17	23.58	284.77
YLR213C	CRR1	0.98	1.23	1.36	1.83	2.07	2.22	2.83	1.28	35.84	17.83	38.68	19.11	296.78
YLR214W	FRE1	0.96	1.19	1.32	1.86	2.09	2.24	1.32	0.79	19.43	10.55	20.74	11.34	293.33
YLR216C	CPR6	0.97	1.23	1.42	2.00	2.22	2.36	1.26	0.75	22.03	9.61	23.29	10.36	294.54
YLR217W	YLR217w	0.99	1.14	1.22	1.76	2.02	2.19	9.30	2.95	56.47	36.07	65.77	39.02	301.71
YLR218C	YLR218c	0.89	1.23	1.43	1.78	2.00	2.16	1.41	1.47	2.59	0.34	4.00	1.81	223.54
YLR219W	MSC3	0.98	1.22	1.38	1.89	2.07	2.21	1.88	0.92	29.51	5.10	31.39	6.02	291.21
YLR220W	CCC1	0.99	1.24	1.43	1.89	2.08	2.24	4.43	1.31	41.94	12.69	46.37	13.99	290.28
YLR221C	RSA3	0.97	1.22	1.40	1.84	2.04	2.19	1.12	1.05	14.46	1.57	15.58	2.62	292.37
YLR224W	YLR224w	0.99	1.28	1.50	2.01	2.18	2.30	4.23	1.55	42.68	21.91	46.91	23.46	261.17
YLR225C	YLR225c	0.99	1.23	1.37	1.93	2.15	2.30	1.46	1.21	20.66	12.66	22.12	13.87	294.68
YLR226W	BUR2	0.87	1.06	1.03	0.99	1.11	1.26	82.62	73.66	130.35	98.75	212.97	172.41	395.14
YLR227C	ADY4	0.99	1.31	1.51	2.01	2.19	2.32	1.11	1.03	10.00	5.69	11.11	6.72	286.33
YLR228C	ECM22	0.99	1.18	1.32	1.82	2.01	2.22	3.38	1.43	34.26	19.20	37.65	20.63	284.43
YLR231C	BNA5	0.97	1.19	1.35	1.66	1.81	2.00	8.19	2.98	54.43	32.77	62.62	35.75	301.63
YLR232W	YLR232w	0.96	1.24	1.41	1.83	2.00	2.18	10.84	2.49	61.46	28.58	72.30	31.07	315.79
YLR233C	EST1	0.96	1.12	1.21	1.55	1.72	1.97	12.40	5.00	67.55	45.97	79.95	50.97	309.24
YLR234W	TOP3	0.96	1.10	1.19	1.56	1.77	2.04	7.70	2.52	52.72	32.44	60.42	34.96	344.83
YLR235C	YLR235c	0.96	1.16	1.30	1.67	1.84	2.06	7.38	3.33	54.19	33.79	61.57	37.12	303.70
YLR236C	YLR236c	0.96	1.17	1.28	1.68	1.84	2.05	9.17	2.94	56.53	32.94	65.70	35.88	308.48
YLR237W	THI7	0.88	1.02	1.16	1.62	1.81	1.99	16.65	1.14	66.59	17.22	83.25	18.36	317.64
YLR238W	FAR10	1.03	1.32	1.52	1.96	2.10	2.26	9.24	3.95	64.69	44.26	73.93	48.22	299.67
YLR239C	LIP2	0.99	1.28	1.47	1.90	2.06	2.24	4.66	2.08	38.70	24.34	43.37	26.41	296.88
YLR240W	VPS34	0.90	0.99	1.01	0.92	0.97	1.05	53.52	37.05	114.48	81.46	168.00	118.51	331.48
YLR241W	YLR241w	1.04	1.30	1.48	1.95	2.12	2.29	11.65	4.78	60.37	43.04	72.02	47.83	318.71
YLR242C		1.05	1.13	1.10	1.11	1.14	1.18	138.63	132.44	134.79	130.71	273.42	263.15	535.42
YLR242C	ARV1	0.93	1.16	1.16	1.04	1.09	1.06	122.62	124.65	134.26	130.45	256.88	255.10	530.10
YLR242C	ARV1	0.83	1.16	1.16	0.89	0.90	0.92	118.75	119.24	124.22	117.58	242.97	236.81	525.44
YLR244C	MAP1	0.87	0.97	0.98	0.91	0.97	1.09	81.68	71.69	129.59	95.23	211.27	166.92	410.59
YLR246W	ERF2	0.94	1.14	1.34	1.77	1.93	2.07	37.75	8.94	98.03	55.62	135.78	64.56	320.03
YLR247C	IRC20	0.96	1.07	1.10	1.50	1.70	1.96	21.70	14.98	74.31	65.81	96.01	80.78	297.71
YLR248W	RCK2	0.94	1.15	1.28	1.74	1.95	2.14	4.84	1.71	40.17	22.99	45.01	24.69	319.37
YLR250W	SSP120	0.96	1.15	1.29	1.71	1.89	2.10	6.41	1.41	50.74	18.29	57.15	19.70	304.84
YLR251W	SYM1	0.98	1.24	1.42	1.85	2.02	2.20	3.38	1.39	39.48	16.73	42.86	18.12	294.51
YLR251W	SYM1	0.85	1.10	1.21	1.62	1.84	2.00	7.91	1.14	51.15	12.14	59.06	13.28	291.04
YLR252W	YLR252w	0.90	1.09	1.21	1.56	1.73	1.94	5.45	1.98	44.13	24.63	49.58	26.61	308.61
YLR253W	YLR253w	0.98	1.20	1.39	1.85	2.02	2.19	3.26	1.74	37.50	21.49	40.75	23.23	287.36
YLR254C	NDL1	0.94	1.15	1.28	1.63	1.78	2.00	6.49	2.80	50.28	33.49	56.77	36.29	311.25
YLR255C	YLR255c	1.00	1.23	1.38	1.78	1.93	2.13	11.12	3.88	58.76	36.19	69.87	40.07	309.37
YLR257W	YLR257w	1.04	1.39	1.61	2.03	2.19	2.35	1.10	1.09	3.74	1.73	4.84	2.82	287.98
YLR258W	GSY2	0.94	1.16	1.32	1.76	1.93	2.11	7.96	3.18	55.40	35.31	63.35	38.49	300.25
YLR260W	LCB5	1.00	1.06	1.02	1.01	1.02	1.02	154.29	126.82	145.52	126.50	299.81	253.32	537.21
YLR260W	LCB5	0.96	1.12	1.13	1.00	0.99	0.97	131.10	130.43	144.11	146.37	275.21	276.80	521.88
YLR261C	VPS63	1.01	1.25	1.41	1.82	1.97	2.09	13.56	4.65	64.17	40.60	77.73	45.25	317.18
YLR262C	YPT6	0.99	1.17	1.30	1.74	1.90	2.08	14.52	5.12	67.68	43.26	82.20	48.37	317.76
YLR262C-A	TMA7	0.85	1.22	1.34	1.69	1.88	2.06	8.04	1.54	50.43	15.26	58.47	16.80	307.30
YLR263W	RED1	1.03	1.27	1.47	1.86	2.02	2.18	9.16	2.09	53.69	29.39	62.84	31.48	313.67
YLR264C-A	YLR264c-a	0.92	1.12	1.23	1.65	1.96	2.17	8.61	1.25	53.75	16.97	62.36	18.21	292.52
YLR264C-A	YLR264c-a	0.93	1.22	1.27	1.67	1.93	2.13	10.96	3.56	54.42	27.61	65.38	31.17	295.06
YLR264W	RPS28b	1.02	1.24	1.36	1.81	2.02	2.19	8.69	1.49	55.21	23.82	63.89	25.31	311.23
YLR265C	NEJ1	0.96	1.15	1.31	1.78	1.96	2.14	7.42	3.60	55.48	36.22	62.90	39.81	305.64
YLR266C	PDR8	0.99	1.27	1.50	1.91	2.06	2.21	4.62	1.32	45.91	17.80	50.53	19.13	264.74
YLR267W	BOP2	1.01	1.20	1.34	1.83	2.05	2.28	0.88	0.95	8.65	5.64	9.53	6.58	289.44
YLR268W	SEC22	1.00	1.25	1.42	1.88	2.04	2.21	8.90	5.07	55.87	45.11	64.77	50.18	312.67
YLR269C	YLR269c	1.05	1.30	1.47	1.91	2.08	2.27	1.04	0.89	18.32	9.67	19.36	10.56	300.00
YLR270W	DCS1	0.94	1.09	1.10	0.98	0.98	1.02	131.29	57.70	141.57	111.63	272.86	169.33	522.83
YLR271W	YLR271w	1.10	1.47	1.70	2.14	2.27	2.40	1.54	0.86	24.61	5.65	26.15	6.51	289.64
YLR273C	PIG1	0.99	1.20	1.34	1.83	2.02	2.21	20.47	5.34	76.28	46.56	96.75	51.90	324.02
YLR278C	YLR278c	1.02	1.21	1.34	1.87	2.07	2.28	5.18	1.05	45.76	10.89	50.94	11.94	301.29
YLR279W	YLR279w	1.07	1.30	1.45	1.97	2.17	2.32	4.88	1.11	46.58	15.22	51.46	16.32	284.91
YLR280C	YLR280c	0.98	1.11	1.16	1.61	1.85	2.06	19.89	11.79	67.65	61.01	87.54	72.81	324.60
YLR281C	YLR281c	1.03	1.39	1.58	1.99	2.13	2.27	4.51	1.23	41.75	13.94	46.26	15.17	299.93
YLR282C	YLR282c	1.01	1.19	1.29	1.77	1.98	2.17	7.36	5.34	53.83	43.17	61.19	48.51	308.46
YLR283W	YLR283w	0.99	1.20	1.37	1.85	2.02	2.18	7.31	2.90	53.74	32.74	61.05	35.64	304.16
YLR284C	ECI1	0.96	1.21	1.35	1.79	1.97	2.14	5.61	4.93	45.96	39.52	51.57	44.49	299.29
YLR285C-A	YLR285c-a	0.90	1.17	1.30	1.64	1.88	2.04	3.59	5.67	40.40	35.88	43.99	41.55	268.88
YLR285W	NNT1	1.00	1.21	1.37	1.88	2.06	2.21	10.60	7.12	58.04	49.45	68.64	56.56	306.64
YLR286C	CTS1	0.93	1.03	1.11	1.59	1.52	1.67	1.71	0.84	16.98	2.01	18.69	2.85	248.48
YLR287-A	Unknown	1.05	1.27	1.37	1.92	2.15	2.34	9.88	3.29	58.58	33.09	68.46	36.37	299.65
YLR287C	YLR287c	1.03	1.29	1.48	1.97	2.16	2.31	2.08	1.20	29.29	13.81	31.38	15.01	290.23
YLR288C	MEC3	0.97	1.12	1.17	1.56	1.76	1.93	24.06	15.78	76.09	63.58	100.15	79.36	285.64
YLR289W	GUF1	1.00	1.15	1.20	1.72	1.96	2.17	22.86	9.08	74.92	53.43	97.78	62.51	343.06
YLR290C	YLR290c	1.00	1.22	1.42	1.92	2.10	2.22	6.21	1.55	50.94	22.18	57.15	23.73	299.32
YLR292C	SEC72	0.93	1.08	1.13	1.51	1.75	1.99	16.16	5.29	64.96	43.23	81.12	48.52	313.58
YLR294C	YLR294c	1.03	1.36	1.54	2.00	2.16	2.29	25.31	7.35	76.70	46.91	102.00	54.25	335.93
YLR295C	ATP14	0.92	1.10	1.18	1.58	1.81	2.04	20.93	4.82	72.92	38.03	93.85	42.85	331.20
YLR296W	YLR296w	0.90	1.09	1.18	1.56	1.75	1.95	7.71	3.97	51.34	37.93	59.05	41.89	291.44
YLR297W	YLR297w	0.94	1.11	1.20	1.55	1.72	1.90	8.00	9.98	55.42	55.08	63.42	65.06	293.18
YLR299W	ECM38	0.92	1.19	1.36	1.77	1.93	2.09	5.02	1.25	43.87	19.28	48.89	20.53	281.76
YLR300W	EXG1	0.87	1.05	1.16	1.53	1.70	1.89	6.03	1.97	47.51	21.95	53.53	23.93	292.16
YLR303W	MET17	0.90	1.09	1.22	1.62	1.80	2.07	2.34	1.09	30.03	15.78	32.36	16.87	278.26
YLR304C	ACO1	0.87	1.06	1.17	1.60	1.80	2.02	1.03	0.63	15.76	3.21	16.80	3.84	266.93
YLR306W	UBC12	0.91	1.09	1.21	1.68	1.88	2.08	8.71	5.98	55.05	45.31	63.76	51.29	288.67
YLR307C-A	YLR307c-a	0.89	1.23	1.42	1.84	2.06	2.20	1.45	3.04	23.15	24.39	24.60	27.43	262.35
YLR307W	CDA1	1.00	1.22	1.38	1.87	2.05	2.23	8.61	3.14	52.72	26.90	61.34	30.03	292.97
YLR308W	CDA2	0.92	1.12	1.27	1.76	1.95	2.13	2.74	0.97	38.66	20.20	41.40	21.17	284.13
YLR309C	IMH1	0.95	1.11	1.21	1.61	1.82	2.03	12.68	4.44	61.11	39.39	73.80	43.84	313.97
YLR311C	YLR311c	1.05	1.33	1.54	2.01	2.17	2.31	25.67	5.58	76.21	41.63	101.88	47.21	343.72
YLR312C	YLR312c	1.06	1.37	1.59	2.03	2.19	2.32	21.84	4.64	73.84	39.32	95.68	43.96	329.16
YLR312C-B	YLR312c-b	0.89	1.22	1.39	1.81	2.02	2.18	2.50	4.02	34.46	30.85	36.96	34.87	263.99
YLR312W-A	MRPL15	0.92	1.09	1.10	0.96	0.96	0.91	128.70	123.39	144.23	141.12	272.93	264.51	520.01
YLR313C	SPH1	1.00	1.24	1.42	1.87	2.04	2.21	5.70	11.44	45.70	55.54	51.40	66.98	290.91
YLR315W	NKP2	0.99	1.31	1.52	1.96	2.11	2.25	2.78	1.16	36.81	9.28	39.59	10.44	308.01
YLR318W	EST2	0.98	1.23	1.33	1.72	1.91	2.11	8.65	1.82	54.50	22.08	63.15	23.90	292.34
YLR319C	BUD6	0.97	1.30	1.53	1.96	2.11	2.25	5.72	1.38	44.45	13.49	50.17	14.87	290.81
YLR320W	MMS22	0.96	1.04	1.06	1.32	1.50	1.71	42.11	25.37	94.32	78.08	136.43	103.45	354.05
YLR322W	VPS65	0.92	1.07	1.13	1.05	1.17	1.32	44.04	25.77	101.43	86.71	145.47	112.47	308.29
YLR324W	PEX30	0.98	1.23	1.39	1.80	1.95	2.11	6.32	1.65	46.52	20.58	52.84	22.23	305.81
YLR325C	RPL36	0.98	1.19	1.30	1.71	1.84	2.01	15.91	6.64	65.21	48.21	81.11	54.86	324.58
YLR326W	YLR326w	1.02	1.39	1.59	2.02	2.15	2.29	1.18	1.01	15.17	4.13	16.35	5.14	280.07
YLR327C	TMA10	0.99	1.29	1.44	1.85	2.00	2.19	5.09	1.41	41.83	17.96	46.93	19.38	308.61
YLR328W	NMA1	0.99	1.34	1.54	1.97	2.11	2.27	5.00	1.37	41.48	16.14	46.47	17.51	294.98
YLR329W	REC102	0.97	1.26	1.43	1.86	2.00	2.17	4.72	1.58	41.38	21.77	46.09	23.35	304.40
YLR329W	REC102	0.98	1.36	1.54	1.91	2.08	2.19	2.98	1.53	32.34	16.22	35.32	17.75	272.45
YLR330W	CHS5	0.97	1.22	1.38	1.83	2.00	2.18	6.07	2.14	45.51	28.32	51.59	30.45	305.54
YLR331C	YLR331c	0.98	1.27	1.49	1.91	2.05	2.12	1.29	0.83	17.52	3.78	18.81	4.61	286.52
YLR332W	MID2	0.99	1.26	1.42	1.91	2.10	2.27	2.76	1.32	32.64	14.92	35.40	16.23	285.22
YLR332W	MID2	1.03	1.31	1.41	1.75	1.97	2.13	12.01	3.75	60.17	29.42	72.18	33.18	294.99
YLR333C	RPS25b	1.05	1.35	1.54	2.02	2.17	2.28	8.75	4.04	51.96	35.54	60.71	39.59	318.35
YLR334C	YLR334c	0.91	1.03	1.17	1.67	1.88	2.06	12.04	0.91	56.99	8.97	69.03	9.88	308.99
YLR335W	NUP2	1.00	1.21	1.35	1.86	2.04	2.21	15.78	5.56	64.63	44.13	80.41	49.69	316.09
YLR337C	VRP1	0.96	1.12	1.19	1.45	1.71	1.88	3.07	0.89	37.35	13.42	40.42	14.31	234.20
YLR338W	YLR338w	0.92	1.14	1.29	1.58	1.80	1.95	1.84	0.71	25.71	7.39	27.55	8.10	258.82
YLR338W	YLR338w	0.97	1.26	1.38	1.61	1.81	1.99	3.88	2.25	35.10	21.88	38.98	24.12	279.53
YLR341W	SPO77	1.04	1.39	1.60	2.07	2.19	2.32	4.89	2.42	42.41	26.95	47.30	29.37	303.27
YLR342W	FKS1	1.01	1.25	1.40	1.88	2.04	2.21	5.41	2.63	43.76	28.02	49.17	30.64	302.14

ORF.name	Strain	Optical density at 600 nm at regular intervals (h)						GLUCOSE		FRUCTOSE		TOTAL SUGARS (g/l)		TOTAL AMINO ACIDS (mg/L)
		0	26	33	48	59	78	102 h	118 h	102 h	118 h	102 h	118 h	102 h
YLR342W-A	YLR342w-a	0.91	1.21	1.34	1.72	1.93	2.10	2.82	6.87	36.61	37.93	39.42	44.80	265.83
YLR343W	GAS2	1.01	1.49	1.72	2.07	2.21	2.30	8.83	3.57	53.83	27.74	62.66	31.32	284.96
YLR344W	RPL26a	1.03	1.32	1.45	1.93	2.07	2.21	10.64	3.72	55.35	35.84	65.99	39.56	321.28
YLR345W	YLR345w	1.04	1.38	1.57	2.08	2.22	2.34	2.64	1.23	24.15	13.19	26.79	14.42	293.93
YLR346C	YLR346c	0.90	1.05	1.22	1.72	1.91	2.10	2.06	0.81	31.14	3.85	33.21	4.66	290.63
YLR348C	DIC1	1.03	1.29	1.44	1.91	2.08	2.24	8.58	2.21	49.88	28.00	58.46	30.22	314.45
YLR349W	YLR349w	1.04	1.39	1.53	2.02	2.15	2.28	7.26	2.22	50.74	30.03	58.00	32.25	313.25
YLR350W	ORM2	1.01	1.32	1.53	1.97	2.11	2.26	12.14	5.17	58.27	40.10	70.41	45.26	308.19
YLR351C	NIT3	1.07	1.37	1.58	2.01	2.16	2.28	7.62	2.28	49.15	29.32	56.77	31.60	319.61
YLR352W	YLR352w	1.01	1.28	1.50	2.00	2.15	2.27	2.65	1.25	31.12	14.02	33.77	15.28	288.28
YLR353W	BUD8	1.01	1.15	1.28	1.72	1.94	2.12	9.41	2.29	54.56	29.38	63.97	31.67	300.32
YLR354C	TAL1	0.99	1.26	1.48	1.87	2.04	2.20	10.10	3.53	56.16	33.82	66.25	37.35	312.36
YLR356W	ATG33	0.96	1.17	1.33	1.83	2.03	2.21	13.42	0.92	63.51	8.08	76.93	9.00	316.67
YLR357W	RSC2	0.97	1.09	1.11	1.32	1.48	1.69	59.57	41.67	104.49	90.42	164.06	132.08	351.47
YLR357W	RSC2	0.88	1.14	1.15	1.27	1.48	1.72	22.12	8.08	78.03	59.66	100.15	67.74	333.36
YLR358C	YLR358c	0.91	0.95	0.97	1.16	1.34	1.57	65.24	50.30	111.20	103.23	176.44	153.53	331.08
YLR360W	VPS38	0.97	1.21	1.35	1.65	1.78	1.95	2.32	0.90	38.21	12.88	40.53	13.78	318.11
YLR361C	DCR2	0.87	0.97	1.09	1.59	1.81	2.01	5.85	1.34	46.46	21.07	52.31	22.41	305.94
YLR361C-A	YLR361c-a	0.93	1.25	1.38	1.81	2.00	2.15	2.47	11.08	35.04	45.11	37.52	56.19	268.83
YLR362W	STE11	0.91	1.23	1.41	1.78	1.94	2.10	3.87	0.96	38.37	8.08	42.25	9.04	283.81
YLR363C	NMD4	0.94	1.27	1.49	1.82	1.97	2.11	15.05	10.19	64.85	53.37	79.90	63.56	298.86
YLR363W-A	YLR363w-a	0.93	1.23	1.38	1.83	2.03	2.17	0.72	5.60	16.02	33.84	16.73	39.44	254.05
YLR364W	GRX8	0.93	1.16	1.33	1.78	1.95	2.12	17.40	1.34	69.64	19.60	87.04	20.93	314.10
YLR365W	YLR365w	0.90	1.06	1.13	1.59	1.81	2.04	13.76	2.43	66.13	28.50	79.88	30.94	321.45
YLR366W	YLR366w	0.90	1.10	1.23	1.71	1.89	2.09	8.26	1.02	53.63	10.42	61.88	11.44	305.31
YLR367W	RPS22b	0.99	1.15	1.27	1.78	1.98	2.17	13.76	8.84	65.39	52.06	79.15	60.90	318.69
YLR368W	MDM30	0.92	1.06	1.15	1.64	1.85	2.04	13.63	2.78	64.07	30.62	77.70	33.39	263.78
YLR369W	SSQ1	0.88	0.98	0.99	0.89	0.91	0.92	88.79	75.06	134.15	98.90	222.94	173.96	404.46
YLR370C	ARC18	0.88	1.18	1.30	1.84	1.82	1.99	6.82	4.85	48.15	33.91	54.97	38.76	290.82
YLR371W	ROM2	0.99	1.28	1.39	1.72	1.91	2.07	1.41	0.81	19.90	2.63	21.31	3.45	253.64
YLR371W	ROM2	0.98	1.20	1.41	1.83	1.99	2.15	18.92	7.12	70.98	47.84	89.90	54.96	330.02
YLR372W	SUR4	0.94	1.20	1.37	1.74	1.87	2.05	19.42	8.55	66.74	48.53	86.17	57.08	325.53
YLR373C	VID22	0.98	1.19	1.34	1.74	1.94	2.18	7.36	5.37	49.00	40.08	56.37	45.45	233.24
YLR374C	YLR374c	0.93	1.31	1.41	1.75	1.93	2.13	1.11	0.89	9.00	2.20	10.10	3.09	269.70
YLR375W	STP3	1.01	1.29	1.49	1.88	2.02	2.19	16.99	2.51	65.31	29.02	82.29	31.53	326.29
YLR376C	PSY3	0.94	1.22	1.39	1.76	1.94	2.15	1.34	1.06	15.96	10.55	17.30	11.61	283.50
YLR377C	FBP1	0.99	1.25	1.43	1.86	2.03	2.19	16.82	2.08	64.10	26.25	80.92	28.33	330.35
YLR380W	CSR1	0.99	1.32	1.54	1.96	2.13	2.29	5.73	2.95	47.11	8.62	52.84	11.57	293.95
YLR381W	CTF3	0.93	1.03	1.02	1.21	1.42	1.69	50.88	25.13	104.34	81.04	155.21	106.17	365.45
YLR382C	NAM2	0.90	1.11	1.28	1.67	1.90	2.05	0.59	0.82	8.59	2.10	9.18	2.92	267.64
YLR384C	IKI3	0.98	1.17	1.33	1.82	1.99	2.18	14.81	2.95	66.14	32.97	80.95	35.92	311.06
YLR385C	SWC7	1.00	1.17	1.29	1.79	2.00	2.19	16.52	6.78	66.28	46.70	82.80	53.49	322.21
YLR386W	VAC14	1.01	1.21	1.35	1.77	1.98	2.21	22.27	9.49	78.74	57.51	101.01	66.99	342.43
YLR387C	REH1	0.93	1.14	1.31	1.71	1.90	2.13	1.09	0.88	12.13	4.18	13.22	5.07	281.09
YLR388W	RPS29a	0.94	1.07	1.13	1.58	1.85	2.10	12.53	5.84	63.58	44.61	76.12	50.45	317.07
YLR389C	STE23	0.90	1.11	1.27	1.61	1.89	2.09	0.86	0.40	14.27	5.00	15.14	5.40	289.97
YLR390W	ECM19	0.90	1.09	1.20	1.58	1.77	1.97	12.47	5.67	65.81	45.18	78.28	50.85	315.91
YLR390W-A	CCW14	0.93	1.26	1.54	1.96	2.14	2.25	5.35	2.52	43.77	30.48	49.12	33.00	292.97
YLR391W	YLR391W	0.87	1.03	1.16	1.78	1.70	1.83	2.43	0.28	33.66	7.40	36.09	7.68	277.10
YLR392C	ART10	0.98	1.23	1.41	1.83	2.01	2.20	2.55	1.21	29.61	15.23	32.16	16.44	280.30
YLR393W	ATP10	1.08	1.50	1.74	2.09	2.21	2.34	3.84	1.06	39.84	11.04	43.68	12.10	271.84
YLR394W	CST9	0.88	1.04	1.21	1.66	1.84	2.02	8.98	2.98	52.85	35.74	61.84	38.72	309.71
YLR395C	COX8	1.07	1.39	1.54	1.93	2.07	2.24	11.67	2.98	61.28	34.84	72.96	37.82	314.99
YLR396C	VPS33	0.98	1.05	1.07	0.97	0.99	0.95	124.32	134.48	145.89	118.02	270.21	252.50	393.16
YLR398C	SKI2	1.03	1.29	1.45	1.88	2.06	2.25	7.66	3.74	54.20	20.43	61.86	24.17	297.94
YLR399C	BDF1	0.90	1.00	1.01	0.91	0.92	0.88	118.68	118.68	145.78	113.13	264.46	231.81	412.39
YLR400W	YLR400w	0.94	1.14	1.27	1.71	1.88	2.07	13.33	4.72	65.32	42.31	78.65	47.03	319.01
YLR401C	DUS3	1.03	1.41	1.52	1.94	2.08	2.25	12.09	9.21	61.64	52.18	73.73	61.39	315.06
YLR402W	YLR402w	1.02	1.35	1.57	1.99	2.15	2.31	1.01	0.93	3.68	0.67	4.70	1.60	256.33
YLR403W	SFP1	0.99	1.19	1.28	1.47	1.75	1.97	0.74	0.45	3.51	0.74	4.25	1.19	221.86
YLR404W	FLD1	1.02	1.24	1.40	1.86	2.04	2.21	12.99	4.38	61.51	38.70	74.50	43.08	315.53
YLR405W	DUS4	1.00	1.27	1.48	1.90	2.07	2.22	2.04	0.96	26.74	7.60	28.78	8.56	289.25
YLR406C	RPL31b	0.99	1.19	1.38	1.86	2.05	2.19	10.81	2.43	57.78	31.68	68.59	34.10	313.53
YLR406C-A	YLR406c-a	0.89	1.15	1.26	1.63	1.85	2.00	1.62	1.96	27.73	31.33	29.35	33.29	263.69
YLR407W	YLR407w	0.95	1.20	1.39	1.80	1.96	2.14	11.88	5.57	59.45	45.53	71.32	51.10	329.76
YLR408C	YLR408c	1.01	1.25	1.39	1.84	2.04	2.23	11.53	7.00	58.63	47.32	70.15	54.32	325.66
YLR410W	VIP1	0.98	1.10	1.16	1.55	1.79	2.05	49.36	35.18	103.06	92.20	152.41	127.37	364.70
YLR412C-A	YLR412c-a	0.90	1.14	1.28	1.70	1.92	2.06	1.59	2.42	32.96	23.43	34.54	25.85	272.92
YLR412W	BER1	0.97	1.16	1.28	1.69	1.88	2.12	9.60	1.97	59.79	28.52	69.39	30.48	320.34
YLR413W	YLR413w	0.99	1.21	1.36	1.73	1.88	2.08	10.64	5.41	60.18	43.14	70.82	48.55	319.36
YLR414C	PUN1	0.98	1.30	1.46	1.86	2.03	2.23	1.12	1.06	8.61	1.79	9.73	2.85	288.32
YLR415C	YLR415c	0.92	1.15	1.33	1.77	1.94	2.15	2.32	2.11	27.96	10.65	30.28	12.75	287.78
YLR416C	YLR416c	0.93	1.18	1.36	1.84	2.02	2.22	1.21	1.01	11.98	5.69	13.20	6.71	276.93
YLR417W	VPS36	0.96	1.21	1.36	1.65	1.77	1.94	12.59	2.79	69.80	43.39	82.40	46.18	346.76
YLR418C	CDC73	1.02	1.17	1.25	1.77	2.00	2.24	22.16	10.92	79.94	64.27	102.11	75.19	313.45
YLR419W	YLR419w	0.95	1.30	1.52	1.93	2.08	2.20	3.68	1.12	38.06	11.63	41.74	12.76	283.09
YLR420W		0.98	1.11	1.08	1.14	1.18	1.17	133.40	117.66	135.85	124.06	269.25	241.71	548.77
YLR420W	URA4	0.89	1.21	1.22	1.10	1.11	1.11	123.11	120.39	132.58	126.27	255.69	246.66	519.89
YLR420W	URA4	0.86	1.15	1.13	0.97	0.96	0.92	126.61	122.21	128.40	120.41	255.01	242.62	521.91
YLR421C	RPN13	0.94	1.08	1.16	1.63	1.84	2.06	23.51	9.81	76.67	59.17	100.18	68.98	334.40
YLR422W	YLR422w	0.97	1.38	1.57	1.94	2.08	2.20	27.28	21.96	66.93	61.38	94.21	83.34	355.41
YLR423C	ATG17	0.98	1.30	1.40	1.61	1.76	1.90	27.84	19.26	66.39	57.57	94.23	76.83	341.58
YLR425W	TUS1	0.89	1.23	1.35	1.74	1.91	2.08	13.11	2.88	64.97	32.38	78.07	35.26	296.05
YLR426W	YLR426w	0.97	1.42	1.65	2.00	2.14	2.24	16.39	6.11	52.83	32.39	69.21	38.51	313.88
YLR427W	MAG2	1.02	1.40	1.53	1.83	2.00	2.13	19.64	6.57	58.69	36.91	78.34	43.48	350.35
YLR428C	YLR428c	0.94	1.35	1.56	1.93	2.09	2.20	17.07	8.22	55.19	40.07	72.26	48.30	331.54
YLR429W	CRN1	1.02	1.45	1.65	2.00	2.14	2.24	21.87	12.93	61.39	50.22	83.26	63.15	348.62
YLR431C	ATG23	1.00	1.44	1.65	2.04	2.17	2.28	24.84	9.54	63.75	41.34	88.59	50.88	355.68
YLR432W	IMD3	0.99	1.43	1.63	1.99	2.15	2.26	19.03	8.86	56.26	41.29	75.29	50.14	349.52
YLR433C	CNA1	0.97	1.36	1.57	1.99	2.17	2.31	4.19	3.62	23.78	18.21	27.97	21.83	299.88
YLR434C	Unknown	1.00	1.32	1.51	1.97	2.14	2.28	13.91	5.92	52.84	34.64	66.75	40.56	328.70
YLR435W	TSR2	0.92	1.20	1.26	1.58	1.84	2.05	23.14	15.02	63.55	51.35	86.69	66.37	338.74
YLR436C	ECM30	0.95	1.31	1.50	1.90	2.10	2.24	3.89	3.09	19.78	4.83	23.67	7.92	301.40
YLR439W	MRPL4	0.90	1.16	1.22	1.61	1.90	2.12	9.31	4.46	53.45	33.13	62.76	37.59	257.07
YLR441C	RPS1a	0.95	1.27	1.42	1.84	2.06	2.22	18.42	9.53	55.22	41.50	73.64	51.03	331.82
YLR442C	SIR3	0.88	1.09	1.33	1.77	1.99	2.16	0.75	0.83	4.61	4.31	5.36	5.14	272.63
YLR443W	ECM7	1.01	1.41	1.66	2.02	2.19	2.30	20.62	5.53	56.23	31.94	76.85	37.47	342.24
YLR444C	YLR444c	0.97	1.39	1.61	1.98	2.12	2.22	19.91	11.31	59.61	45.60	79.52	56.91	345.34
YLR445W	YLR445w	1.00	1.46	1.71	2.09	2.21	2.31	20.33	8.56	58.66	38.54	78.99	47.09	359.92
YLR445W	YLR445w	0.97	1.35	1.55	1.93	2.09	2.22	3.53	0.93	35.57	9.14	39.10	10.06	280.94
YLR446W	YLR446w	0.98	1.42	1.63	1.98	2.14	2.27	16.32	3.99	56.04	23.74	72.36	27.73	370.77
YLR447C	VMA6	0.89	1.20	1.17	1.20	1.49	1.78	37.62	22.36	99.76	82.91	137.38	105.27	328.12
YLR448W	RPL6b	0.99	1.34	1.57	1.96	2.10	2.21	21.51	17.35	62.25	57.00	83.76	74.35	331.65
YLR449W	FPR4	0.90	1.25	1.44	1.84	2.19	2.16	1.72	1.29	23.29	2.78	25.01	4.07	253.03
YLR450W	HMG2	0.85	1.20	1.34	1.68	1.87	2.04	4.05	1.36	40.58	9.33	44.62	10.68	290.17
YLR451W	LEU3	0.95	1.18	1.33	1.71	1.92	2.02	3.88	3.92	41.52	38.78	45.40	42.69	290.40
YLR452C	SST2	0.92	1.23	1.29	1.62	1.89	2.11	3.92	1.45	43.83	14.65	47.74	16.10	293.70
YLR453C	RIF2	0.96	1.29	1.43	1.71	1.89	2.05	4.31	3.10	25.19	6.40	29.50	9.49	315.93
YLR454W	FMP27	0.96	1.38	1.63	1.98	2.12	2.24	22.53	7.75	63.50	38.56	86.03	46.32	356.22
YLR455W	YLR455w	0.89	1.08	1.27	1.81	2.36	2.16	0.72	0.73	3.79	2.51	4.51	3.23	262.02
YLR456W	YLR456w	0.96	1.32	1.56	1.92	2.06	2.18	18.00	8.91	56.44	38.07	74.44	46.98	342.58
YLR460C	YLR460c	0.96	1.39	1.63	2.01	2.16	2.27	17.61	12.10	56.06	48.97	73.67	61.06	334.76
YLR461W	PAU4	0.96	1.38	1.60	1.95	2.10	2.20	18.44	9.80	53.45	39.95	71.88	49.75	346.35
YML001W	YPT7	1.00	1.00	1.40	1.75	1.90	2.08	9.04	1.71	3.70	-1.35	12.73	0.35	366.38
YML002W	YML002w	0.98	0.98	1.49	1.88	2.03	2.21	11.23	1.68	1.61	-1.54	12.84	0.14	289.32
YML003W	YML003w	0.94	0.94	1.42	1.82	1.99	2.17	13.89	1.75	0.27	-1.38	14.17	0.37	282.82
YML004C	GLO1	0.94	0.94	1.46	1.87	2.02	2.20	12.73	1.56	1.70	-1.43	14.44	0.13	278.67
YML005W	TRM12	0.98	0.98	1.52	1.92	2.11	2.32	9.65	1.70	2.39	-1.52	12.04	0.17	268.67
YML006C	GIS4	1.01	1.01	1.57	1.99	2.15	2.32	1.45	1.46	-1.49	-1.43	-0.04	0.03	281.65
YML007C-A	YML007c-a	0.97	1.25	1.46	1.91	2.14	2.25	7.26	1.30	55.34	18.28	62.61	19.58	292.47
YML007C-A	YML007c-a	0.94	1.36	1.54	1.99	2.17	2.30	4.46	1.44	37.57	11.14	42.03	12.58	272.48
YML007W	YAP1	0.95	0.95	1.44	1.89	2.04	2.21	1.28	1.16	-1.58	-1.38	-0.31	-0.22	290.86
YML008C	ERG6	0.88	0.88	1.21	1.58	1.75	1.98	4.43	1.55	7.48	-1.38	11.91	0.16	291.31
YML009c	MRPL39	0.91	0.91	1.34	1.75	1.92	2.11	6.33	47.62	4.12	-58.41	10.45	-10.79	280.86
YML009C	MRPL39	0.98	1.39	1.58	1.93	2.09	2.21	14.81	4.37	50.67	23.41	65.48	27.79	331.66
YML010C-B	Unknown	0.98	1.33	1.47	1.85	2.04	2.18	25.11	10.47	66.65	44.92	91.76	55.38	368.79
YML010W-A	Unknown	0.97	1.07	1.09	1.17	1.37	1.59	28.33	13.65	78.83	63.45	107.16	77.09	340.08
YML011C	RAD33	0.96	0.96	1.33	1.77	1.98	2.19	10.81	1.46	3.80	-1.32	14.61	0.13	277.40
YML012W	ERV25	0.90	0.90	1.20	1.65	1.85	2.07	6.27	1.27	4.68	-1.07	10.96	0.20	284.02
YML013C-A	Unknown	0.97	0.97	1.31	1.76	1.99	2.26	8.45	1.46	1.06	-1.48	9.52	-0.01	282.47
YML013W	UBX2	1.00	1.00	1.47	1.85	2.00	2.19	11.40	1.66	0.85	-1.55	12.25	0.11	283.20
YML014W	TRM9	0.99	0.99	1.32	1.77	1.99	2.23	10.78	1.39	1.11	-1.38	11.89	0.01	231.25
YML016C	PPZ1	0.99	0.99	1.44	1.82	2.03	2.25	10.62	1.49	-0.38	-1.46	10.24	0.03	266.39
YML017W	PSP2	0.98	0.98	1.59	1.98	2.12	2.29	13.89	1.84	0.77	-1.52	14.67	0.32	236.38

ORF.name	Strain	Optical density at 600 nm at regular intervals (h)						GLUCOSE		FRUCTOSE		TOTAL SUGARS (g/l)		TOTAL AMINO ACIDS (mg/L)
		0	26	33	48	59	78	102 h	118 h	102 h	118 h	102 h	118 h	102 h
YML018C	*YML018c*	0.98	0.98	1.51	1.88	2.03	2.21	**11.75**	**1.31**	**2.36**	**-1.38**	**14.11**	**-0.08**	**254.15**
YML019W	*OST6*	0.97	0.97	1.42	1.82	1.98	2.18	**1.57**	**1.60**	**-1.46**	**-1.48**	**0.11**	**0.13**	**265.97**
YML020W	*YML020w*	0.95	0.95	1.43	1.89	2.08	2.31	**1.23**	**1.73**	**-1.38**	**-1.13**	**-0.16**	**0.60**	**252.68**
YML021C	*UNG1*	0.91	1.25	1.43	1.80	1.99	2.16	**11.29**	**5.60**	**47.19**	**31.50**	**58.48**	**37.10**	**341.53**
YML022W	*APT1*	0.95	1.16	1.23	1.42	1.61	1.76	**2.48**	**1.28**	**26.94**	**6.82**	**29.42**	**8.10**	**326.86**
YML024W	*RPS17a*	0.92	0.92	1.02	1.36	1.67	2.01	**5.40**	**1.62**	**5.16**	**-1.37**	**10.56**	**0.25**	**305.50**
YML026C	*RPS18b*	0.89	0.89	1.15	1.61	1.85	2.11	**9.13**	**1.56**	**2.37**	**-1.38**	**11.50**	**0.17**	**266.90**
YML027W	*YOX1*	0.97	1.27	1.52	1.98	2.14	2.29	**1.02**	**0.92**	**14.55**	**1.74**	**15.57**	**2.66**	**276.33**
YML028W	*TSA1*	0.94	0.94	1.28	1.61	1.78	2.02	**18.87**	**1.50**	**-0.82**	**-1.38**	**18.04**	**0.11**	**302.52**
YML029W	*USA1*	0.94	0.94	1.37	1.79	1.96	2.15	**8.47**	**1.66**	**2.66**	**-1.38**	**11.13**	**0.27**	**299.73**
YML030W	*AIM31*	0.95	0.95	1.42	1.79	1.96	2.14	**9.97**	**1.22**	**1.64**	**-1.43**	**11.61**	**-0.21**	**269.49**
YML032C	*RAD52*	1.01	1.01	1.28	1.81	1.83	2.04	**11.56**	**1.54**	**3.22**	**-1.45**	**14.78**	**0.10**	**351.47**
YML033W	*YML033W*	0.99	0.99	1.39	1.74	1.91	2.09	**10.86**	**1.62**	**-0.21**	**-1.54**	**10.64**	**0.09**	**274.19**
YML034W	*SRC1*	1.01	1.01	1.51	1.90	2.06	2.22	**17.07**	**1.58**	**-2.95**	**-1.49**	**14.12**	**0.09**	**290.62**
YML034W	*SRC1*	0.91	1.22	1.37	1.72	1.91	2.08	**5.49**	**1.39**	**49.04**	**16.08**	**54.54**	**17.47**	**292.33**
YML035C	*AMD1*	1.00	1.00	1.55	2.01	2.17	2.34	**10.67**	**1.72**	**3.53**	**-1.51**	**14.20**	**0.21**	**278.10**
YML035C	*AMD1*	0.92	1.07	1.21	1.62	1.83	2.03	**1.19**	**0.59**	**21.40**	**4.48**	**22.58**	**5.07**	**298.14**
YML035C-A	*Unknown*	1.00	1.00	1.45	1.88	2.05	2.22	**15.75**	**1.50**	**-0.40**	**-1.25**	**15.35**	**0.25**	**304.75**
YML036W	*CGI121*	0.92	1.05	1.21	1.72	1.92	2.09	**22.56**	**1.75**	**73.24**	**24.85**	**95.80**	**26.61**	**315.13**
YML037C	*YML037c*	1.03	1.03	1.60	2.03	2.20	2.38	**1.26**	**1.43**	**-1.43**	**-1.45**	**-0.17**	**-0.01**	**255.30**
YML038C	*YMD8*	0.99	1.22	1.40	1.86	2.04	2.18	**7.89**	**0.95**	**50.74**	**6.60**	**58.63**	**7.55**	**306.42**
YML041C	*VPS71*	0.97	1.04	1.12	1.49	1.69	1.87	**43.52**	**14.07**	**97.28**	**61.25**	**140.80**	**75.32**	**332.60**
YML042W	*CAT2*	0.98	1.19	1.41	1.91	2.09	2.24	**4.54**	**0.89**	**42.92**	**10.90**	**47.46**	**11.79**	**292.20**
YML047C	*PRM6*	0.87	0.99	1.14	1.61	1.81	1.98	**5.31**	**2.18**	**46.14**	**28.53**	**51.45**	**30.71**	**299.29**
YML048W	*GSF2*	0.89	0.89	1.16	1.49	1.66	1.90	**6.24**	**1.70**	**4.08**	**-1.64**	**10.32**	**0.05**	**286.83**
YML048W-A	*Unknown*	0.92	1.26	1.40	1.82	2.04	2.16	**17.49**	**3.68**	**64.93**	**35.95**	**82.42**	**39.62**	**324.57**
YML050W	*AIM32*	0.93	0.93	1.43	1.85	2.02	2.24	**9.12**	**1.38**	**1.82**	**-1.51**	**10.94**	**-0.13**	**262.87**
YML051W	*GAL80*	0.93	0.93	1.27	1.61	1.78	1.99	**11.53**	**1.81**	**2.83**	**-1.42**	**14.36**	**0.40**	**332.20**
YML052W	*SUR7*	0.93	0.93	1.20	1.48	1.63	1.85	**9.74**	**1.44**	**2.02**	**-1.43**	**11.76**	**0.01**	**276.43**
YML053C	*YML053c*	0.97	1.37	1.52	1.97	2.40	2.37	**22.94**	**10.99**	**75.09**	**53.02**	**98.04**	**64.01**	**345.88**
YML054C	*CYB2*	1.00	1.00	1.41	1.82	2.00	2.20	**10.97**	**1.43**	**2.23**	**-1.40**	**13.21**	**0.03**	**262.66**
YML054C-A	*YML054c-a*	0.88	1.10	1.26	1.70	1.94	2.10	**12.33**	**4.93**	**63.68**	**33.51**	**76.01**	**38.45**	**307.59**
YML055W	*SPC2*	0.89	1.26	1.44	1.88	2.13	2.32	**1.02**	**0.82**	**12.84**	**2.86**	**13.86**	**3.69**	**255.91**
YML056C	*IMD4*	1.06	1.06	1.57	1.91	2.10	2.30	**14.33**	**37.98**	**-0.78**	**-2.10**	**13.56**	**35.88**	**268.84**
YML057W	*CMP2*	0.86	1.20	1.35	1.67	1.90	2.04	**11.79**	**1.51**	**54.70**	**14.31**	**66.49**	**15.81**	**301.92**
YML058C-A	*Unknown*	0.97	0.97	1.56	1.94	2.10	2.26	**13.07**	**1.95**	**1.00**	**-1.37**	**14.08**	**0.58**	**285.56**
YML058W	*SML1*	1.00	1.00	1.40	1.81	2.00	2.22	**1.61**	**1.43**	**-1.35**	**-1.42**	**0.26**	**0.02**	**296.52**
YML058W-A	*HUG1*	0.89	1.18	1.34	1.77	2.00	2.17	**11.04**	**4.50**	**58.94**	**30.41**	**69.98**	**34.90**	**306.83**
YML059C	*NTE1*	0.96	0.96	1.41	1.88	2.06	2.24	**1.66**	**1.91**	**-1.51**	**-1.63**	**0.15**	**0.28**	**283.35**
YML060W	*OGG1*	0.93	0.93	1.24	1.65	1.84	2.07	**6.88**	**1.44**	**2.97**	**-1.34**	**9.85**	**0.10**	**309.46**
YML061C	*PIF1*	0.91	0.91	1.25	1.66	1.87	2.10	**9.32**	**1.57**	**0.85**	**-1.45**	**10.17**	**0.12**	**279.01**
YML062C	*MFT1*	0.93	0.93	1.30	1.69	1.84	2.04	**11.61**	**1.46**	**0.94**	**-1.35**	**12.55**	**0.11**	**346.29**
YML063W	*RPS1b*	0.90	1.27	1.39	1.82	2.03	2.17	**20.07**	**6.05**	**72.55**	**44.29**	**92.63**	**50.35**	**326.62**
YML066C	*SMA2*	0.90	1.07	1.24	1.62	1.88	2.07	**1.59**	**1.11**	**28.89**	**16.56**	**30.47**	**17.67**	**311.62**
YML067C	*ERV41*	1.00	1.49	1.70	2.07	2.21	2.32	**13.88**	**7.75**	**62.40**	**51.71**	**76.29**	**59.46**	**306.62**
YML068W	*ITT1*	0.91	1.29	1.44	1.87	2.04	2.16	**16.69**	**7.84**	**70.50**	**48.86**	**87.19**	**56.70**	**325.04**
YML070W	*DAK1*	0.98	1.54	1.75	2.07	2.21	2.30	**12.65**	**4.87**	**49.72**	**27.57**	**62.38**	**32.45**	**336.64**
YML071C	*COG8*	0.93	1.41	1.58	1.91	2.00	2.11	**20.31**	**9.62**	**62.88**	**46.62**	**83.19**	**56.24**	**350.57**
YML072C	*TCB3*	0.93	1.33	1.50	1.96	2.13	2.25	**21.10**	**9.35**	**71.42**	**53.02**	**92.52**	**62.37**	**340.31**
YML073C	*RPL6a*	1.01	1.27	1.44	1.91	2.12	2.25	**9.43**	**1.84**	**45.16**	**20.25**	**53.59**	**22.10**	**289.95**
YML074C	*FPR3*	0.99	1.57	1.78	2.13	2.24	2.34	**9.29**	**4.90**	**44.39**	**25.91**	**53.68**	**30.81**	**309.37**
YML075C	*HMG1*	0.84	0.94	1.07	1.57	1.77	1.97	**2.59**	**0.92**	**31.64**	**14.71**	**34.23**	**15.62**	**290.09**
YML076C	*WAR1*	0.91	1.12	1.33	1.76	1.94	2.05	**10.72**	**3.13**	**58.20**	**35.36**	**68.92**	**38.50**	**322.35**
YML078W	*CPR3*	0.97	0.97	1.43	1.79	1.96	2.16	**9.62**	**1.65**	**2.19**	**-1.51**	**11.80**	**0.14**	**332.71**
YML079W	*YML079w*	0.97	0.97	1.26	1.58	1.74	1.95	**10.83**	**1.90**	**1.85**	**-1.55**	**12.69**	**0.35**	**310.13**
YML080W	*DUS1*	1.01	1.01	1.47	1.88	2.04	2.22	**12.55**	**1.23**	**1.78**	**-1.28**	**14.32**	**-0.04**	**304.93**
YML081C-A	*ATP18*	0.97	1.33	1.53	1.96	2.12	2.23	**17.03**	**8.11**	**57.56**	**38.76**	**74.59**	**46.87**	**336.06**
YML081W	*YML081w*	1.01	1.01	1.55	1.93	2.10	2.26	**12.68**	**2.07**	**2.02**	**-1.29**	**14.70**	**0.77**	**281.80**
YML082W	*YML082w*	0.98	0.98	1.39	1.71	1.88	2.11	**10.10**	**1.53**	**2.11**	**-1.35**	**12.21**	**0.18**	**272.40**
YML083C	*YML083c*	0.99	0.99	1.40	1.80	1.99	2.21	**6.77**	**1.40**	**4.52**	**-1.40**	**11.29**	**0.00**	**283.65**
YML084W	*YML084w*	1.03	1.03	1.56	1.96	2.12	2.30	**1.74**	**1.37**	**-1.52**	**-1.26**	**0.22**	**0.11**	**308.98**
YML086C	*ALO1*	0.97	0.97	1.37	1.85	2.03	2.23	**1.34**	**1.17**	**-1.48**	**-1.38**	**-0.14**	**-0.22**	**278.00**
YML086C	*ALO1*	0.88	1.06	1.24	1.70	1.92	2.10	**5.60**	**1.28**	**45.43**	**17.60**	**51.04**	**18.88**	**310.79**
YML087C	*AIM33*	0.90	0.90	1.27	1.95	1.95	2.18	**1.59**	**1.54**	**-1.45**	**-1.26**	**0.14**	**0.28**	**299.47**
YML088W	*UFO1*	0.90	0.90	1.33	1.77	1.95	2.19	**1.51**	**1.34**	**-0.99**	**-1.38**	**0.52**	**-0.04**	**295.02**
YML089C	*YML089c*	0.93	0.93	1.38	1.78	1.95	2.16	**1.71**	**1.55**	**0.70**	**-1.34**	**2.41**	**0.21**	**327.47**
YML090W	*YML090w*	0.92	1.35	1.54	1.89	2.04	2.17	**11.59**	**4.01**	**49.42**	**22.62**	**61.01**	**26.63**	**331.91**
YML094W	*GIM5*	0.98	1.40	1.56	1.91	2.07	2.19	**22.61**	**11.63**	**69.00**	**52.25**	**91.61**	**63.88**	**334.92**
YML095C	*RAD10*	0.99	1.49	1.70	2.08	2.21	2.31	**4.23**	**3.38**	**23.60**	**14.96**	**27.83**	**18.34**	**280.73**
YML095C-A	*Unknown*	0.94	1.38	1.49	1.71	1.73	2.05	**35.81**	**26.02**	**79.95**	**76.45**	**115.76**	**102.48**	**352.88**
YML096W	*YML096w*	1.00	1.51	1.70	2.01	2.63	2.76	**12.68**	**5.13**	**49.51**	**28.22**	**62.19**	**33.34**	**332.34**
YML097C	*VPS9*	0.98	1.39	1.50	1.73	1.85	2.00	**3.80**	**3.04**	**40.49**	**15.50**	**44.29**	**18.55**	**339.72**
YML099C	*ARG81*	0.99	1.52	1.71	2.03	2.16	2.25	**10.04**	**4.82**	**46.43**	**28.29**	**56.48**	**33.12**	**306.53**
YML100W	*TSL1*	1.00	1.45	1.63	1.97	2.13	2.27	**5.24**	**3.30**	**30.37**	**11.92**	**35.62**	**15.22**	**310.76**
YML100W-A	*YML100w-a*	1.03	1.64	1.84	2.23	2.35	2.44	**3.85**	**3.07**	**23.60**	**6.93**	**27.45**	**10.00**	**276.81**
YML101C	*CUE4*	0.98	1.50	1.68	2.00	2.16	2.27	**3.32**	**3.16**	**16.41**	**9.83**	**19.73**	**12.99**	**293.37**
YML102C-A	*Unknown*	0.99	1.63	1.85	2.18	2.28	2.35	**14.58**	**5.25**	**57.57**	**28.04**	**72.15**	**33.29**	**331.46**
YML102W	*CAC2*	0.97	1.47	1.68	2.00	2.13	2.25	**8.60**	**3.72**	**39.81**	**18.56**	**48.41**	**22.27**	**270.78**
YML103C	*NUP188*	0.94	1.30	1.39	1.76	1.92	2.02	**50.74**	**41.21**	**92.62**	**86.58**	**143.37**	**127.80**	**371.58**
YML104C	*MDM1*	0.97	1.44	1.62	1.97	2.11	2.23	**8.63**	**3.59**	**45.56**	**20.08**	**54.19**	**23.67**	**305.70**
YML104C	*MDM1*	0.93	1.26	1.46	1.82	2.00	2.14	**6.94**	**1.41**	**50.31**	**15.94**	**57.26**	**17.35**	**269.58**
YML106W	*URA5*	0.93	1.17	1.17	1.13	1.18	1.38	**91.60**	**87.17**	**112.14**	**110.44**	**203.74**	**197.60**	**455.69**
YML107C	*PML39*	0.98	1.35	1.47	1.82	1.97	2.09	**23.63**	**15.22**	**72.78**	**57.56**	**96.43**	**72.78**	**349.90**
YML108W	*YML108w*	0.98	1.47	1.64	2.02	2.19	2.30	**4.17**	**3.16**	**24.69**	**8.24**	**28.86**	**11.39**	**286.69**
YML109W	*ZDS2*	0.91	1.39	1.58	1.91	2.05	2.17	**9.42**	**4.35**	**47.30**	**26.73**	**56.72**	**31.08**	**318.60**
YML110C	*COQ5*	0.96	1.03	1.07	0.97	0.98	0.95	**122.83**	**121.58**	**150.05**	**114.15**	**272.89**	**235.73**	**439.44**
YML111W	*BUL2*	0.95	1.06	1.16	1.42	1.64	1.81	**10.48**	**1.17**	**62.41**	**17.02**	**72.89**	**18.19**	**283.26**
YML112W	*CTK3*	0.92	1.00	1.02	0.95	1.01	1.12	**82.27**	**66.82**	**130.02**	**92.99**	**212.30**	**159.80**	**430.78**
YML113W	*DAT1*	1.00	1.53	1.74	2.08	2.21	2.31	**6.46**	**3.57**	**36.92**	**16.29**	**43.38**	**19.85**	**304.67**
YML115C	*VAN1*	0.90	1.03	1.17	1.65	1.88	2.07	**6.19**	**1.06**	**46.05**	**15.65**	**52.25**	**16.71**	**306.55**
YML116W	*ATR1*	0.95	1.39	1.61	1.97	2.12	2.25	**9.52**	**6.13**	**47.44**	**34.46**	**56.96**	**40.60**	**317.84**
YML117W	*NAB6*	0.94	1.41	1.57	1.85	1.98	2.13	**7.04**	**3.42**	**37.56**	**14.03**	**44.60**	**17.45**	**332.28**
YML117W-A	*Unknown*	0.97	1.51	1.70	2.02	2.13	2.26	**12.10**	**4.43**	**49.74**	**21.66**	**61.84**	**26.08**	**343.11**
YML118W	*NGL3*	0.92	1.35	1.50	1.83	1.97	2.11	**13.14**	**6.54**	**50.99**	**37.00**	**64.12**	**43.54**	**327.93**
YML119W	*YML119w*	0.91	1.38	1.52	1.87	2.01	2.14	**8.55**	**6.22**	**42.18**	**33.10**	**50.73**	**39.32**	**306.65**
YML120C	*NDI1*	0.92	1.43	1.63	2.01	2.14	2.23	**17.08**	**8.05**	**60.08**	**40.76**	**77.16**	**48.80**	**333.64**
YML121W	*GTR1*	1.00	1.41	1.55	1.86	2.03	2.16	**32.46**	**20.05**	**77.65**	**61.09**	**110.11**	**81.14**	**395.08**
YML122C	*YML122c*	0.90	1.40	1.60	1.95	1.96	2.16	**10.34**	**5.82**	**47.06**	**31.01**	**57.41**	**36.83**	**303.65**
YML123C	*PHO84*	1.04	1.61	1.82	2.15	2.53	2.51	**13.37**	**5.34**	**56.66**	**32.14**	**70.03**	**37.48**	**323.76**
YML124C	*TUB3*	0.97	1.51	1.73	2.05	2.18	2.26	**14.46**	**8.20**	**56.80**	**41.88**	**71.26**	**50.08**	**329.96**
YML128C	*MSC1*	0.95	1.37	1.52	1.87	2.01	2.14	**20.48**	**9.73**	**66.45**	**45.10**	**86.93**	**54.83**	**340.84**
YML129C	*COX14*	0.95	1.16	1.32	1.74	1.94	2.03	**7.76**	**0.82**	**54.94**	**4.64**	**62.71**	**5.46**	**298.27**
YML131W	*YML131w*	1.02	1.58	1.80	2.14	2.38	2.28	**10.31**	**4.94**	**48.22**	**30.08**	**58.53**	**35.03**	**315.98**
YMR001C-A	*YMR001c-a*	0.92	1.17	1.31	1.68	1.93	2.10	**3.09**	**1.18**	**34.01**	**12.44**	**37.10**	**13.62**	**287.69**
YMR002W	*MIC17*	0.98	0.98	1.45	1.83	1.98	2.17	**9.59**	**1.42**	**4.32**	**-1.49**	**13.90**	**-0.08**	**284.22**
YMR003W	*AIM34*	0.98	0.98	1.43	1.84	2.02	2.24	**5.72**	**1.29**	**4.71**	**-1.43**	**10.43**	**-0.14**	**266.67**
YMR004W	*MVP1*	1.02	1.57	1.78	2.13	2.26	2.35	**6.09**	**4.41**	**40.81**	**24.19**	**46.90**	**28.60**	**319.68**
YMR006C	*PLB2*	0.94	0.94	1.37	1.72	1.87	2.08	**5.45**	**1.82**	**6.19**	**-1.40**	**11.64**	**0.42**	**287.21**
YMR007W	*YMR007w*	0.89	0.89	1.31	1.73	1.92	2.13	**6.04**	**-0.33**	**6.40**	**-1.57**	**12.44**	**-1.90**	**279.07**
YMR008C	*PLB1*	0.91	0.91	1.27	1.66	1.82	2.04	**0.95**	**1.08**	**7.12**	**-0.64**	**8.07**	**0.44**	**290.27**
YMR009W	*ADI1*	0.93	0.93	1.36	1.81	1.97	2.17	**1.46**	**1.24**	**-1.58**	**0.06**	**-0.12**	**1.30**	**290.89**
YMR010W	*YMR010w*	1.07	1.07	1.65	1.97	2.10	2.26	**1.39**	**1.39**	**-1.55**	**-1.35**	**-0.16**	**0.04**	**291.84**
YMR011W	*HXT2*	0.98	0.98	1.52	1.88	2.03	2.22	**5.20**	**1.48**	**5.31**	**-1.43**	**10.50**	**0.05**	**281.26**
YMR012W	*CLU1*	1.00	1.00	1.53	1.90	2.06	2.23	**8.87**	**1.94**	**2.13**	**-1.66**	**11.00**	**0.29**	**294.50**
YMR013W-A	*YMR013w-a*	0.88	1.11	1.21	1.54	1.80	1.98	**10.09**	**8.90**	**60.56**	**41.99**	**70.65**	**50.96**	**295.98**
YMR014W	*BUD22*	0.99	0.99	1.56	1.96	2.10	2.27	**7.44**	**1.70**	**3.79**	**-1.52**	**11.23**	**0.17**	**292.53**
YMR015C	*ERG5*	0.99	0.99	1.51	1.89	2.05	2.24	**5.50**	**1.60**	**4.49**	**-1.34**	**9.99**	**0.27**	**294.42**
YMR016C	*SOK2*	1.02	1.02	1.71	1.87	1.85	2.01	**3.88**	**1.40**	**6.27**	**-1.43**	**10.14**	**-0.03**	**283.92**
YMR017W	*SPO20*	0.98	0.98	1.47	1.87	2.04	2.25	**5.07**	**1.51**	**6.13**	**-1.45**	**11.20**	**0.07**	**279.82**
YMR018W	*YMR018w*	0.95	0.95	1.37	1.76	1.92	2.12	**3.67**	**1.46**	**6.43**	**-1.42**	**10.10**	**0.04**	**294.72**
YMR019W	*STB4*	0.91	0.91	1.33	1.78	1.94	2.14	**0.86**	**1.06**	**7.70**	**-1.40**	**8.55**	**-0.34**	**301.49**
YMR020W	*FMS1*	0.89	0.89	1.34	1.80	1.96	2.17	**0.61**	**42.52**	**6.13**	**0.35**	**6.74**	**42.87**	**282.52**
YMR021C	*MAC1*	0.87	0.87	0.90	0.95	1.05	1.26	**1.37**	**1.23**	**-0.14**	**-1.07**	**1.24**	**0.16**	**311.05**
YMR022W	*UBC7*	0.95	0.95	1.40	1.89	2.07	2.29	**1.34**	**1.88**	**-1.58**	**-1.40**	**-0.24**	**0.48**	**275.75**
YMR023C	*MSS1*	1.01	1.01	1.54	1.92	2.06	2.25	**1.26**	**1.49**	**-1.48**	**-1.43**	**-0.21**	**0.06**	**310.95**
YMR024W	*MRPL3*	1.01	1.01	1.05	1.04	1.06	1.12	**1.22**	**0.66**	**-1.52**	**-1.38**	**-0.30**	**-0.72**	**475.77**
YMR025W	*CSI1*	0.99	0.99	1.46	1.87	2.05	2.28	**1.23**	**1.59**	**-1.49**	**-1.26**	**-0.26**	**0.33**	**270.50**
YMR026C	*PEX12*	0.99	0.99	1.51	1.91	2.07	2.24	**1.29**	**2.49**	**-1.66**	**-1.51**	**-0.36**	**0.98**	**295.54**
YMR027W	*YMR027w*	0.98	0.98	1.45	1.86	2.01	2.22	**1.33**	**1.47**	**-1.58**	**-1.34**	**-0.26**	**0.13**	**310.63**
YMR029C	*FAR8*	0.93	0.93	1.43	1.87	2.04	2.24	**1.23**	**1.71**	**-1.55**	**-1.40**	**-0.32**	**0.31**	**275.48**
YMR030W	*RSF1*	0.94	0.94	1.45	1.89	2.05	2.25	**1.31**	**1.73**	**-1.52**	**-1.42**	**-0.21**	**0.31**	**273.77**
YMR031C	*YMR031c*	0.90	0.90	1.45	1.86	2.02	2.20	**1.26**	**1.77**	**-1.57**	**-0.61**	**-0.30**	**1.16**	**277.75**
YMR031W-A	*YMR031w-a*	0.90	0.90	1.00	1.31	1.54	1.82	**1.31**	**1.60**	**-1.60**	**-0.44**	**-0.29**	**1.16**	**360.88**
YMR032W	*HOF1*	0.88	0.88	1.27	1.68	1.87	2.09	**1.08**	**1.86**	**-1.52**	**-1.23**	**-0.44**	**0.63**	**202.13**

ORF.name	Strain	Optical density at 600 nm at regular intervals (h)						GLUCOSE		FRUCTOSE		TOTAL SUGARS (g/l)		TOTAL AMINO ACIDS (mg/L)
		0	26	33	48	59	78	102 h	118 h	102 h	118 h	102 h	118 h	102 h
YMR032W	*HOF1*	0.95	1.16	1.20	1.42	1.65	1.85	**22.85**	**8.60**	**71.18**	**36.70**	**94.03**	**45.30**	**269.70**
YMR034C	*YMR034c*	0.96	0.96	1.38	1.86	2.07	2.30	**1.02**	**0.96**	**-1.54**	**-0.78**	**-0.52**	**0.18**	**295.80**
YMR035W	*IMP2*	0.98	1.04	1.02	1.01	1.04	1.09	**123.13**	**121.79**	**123.03**	**131.15**	**246.16**	**252.94**	**520.44**
YMR036C	*MIH1*	1.00	1.23	1.44	1.90	2.09	2.27	**2.34**	**1.79**	**35.91**	**18.19**	**38.25**	**19.98**	**295.96**
YMR037C	*MSN2*	0.90	1.06	1.24	1.74	1.99	2.17	**1.41**	**0.75**	**22.37**	**5.14**	**23.78**	**5.89**	**280.36**
YMR038C	*CCS1*	0.92	1.13	1.29	1.68	1.86	1.97	**3.26**	**1.02**	**33.56**	**7.41**	**36.81**	**8.43**	**276.24**
YMR039C	*SUB1*	0.99	1.25	1.45	1.91	2.11	2.30	**2.04**	**0.46**	**32.27**	**14.77**	**34.31**	**15.23**	**313.31**
YMR040W	*YET2*	1.04	1.30	1.54	1.99	2.15	2.30	**12.37**	**1.96**	**57.83**	**31.91**	**70.20**	**33.87**	**326.63**
YMR041C	*ARA2*	1.00	1.25	1.49	1.97	2.15	2.35	**0.36**	**0.16**	**17.48**	**8.55**	**17.83**	**8.71**	**291.78**
YMR042W	*ARG80*	1.00	1.20	1.41	1.90	2.09	2.28	**10.38**	**1.00**	**55.68**	**26.53**	**66.06**	**27.52**	**309.11**
YMR044W	*IOC4*	0.96	1.11	1.28	1.74	1.94	2.16	**8.89**	**14.00**	**55.20**	**68.82**	**64.08**	**82.82**	**300.20**
YMR048W	*CSM3*	0.90	0.94	0.98	1.25	1.51	1.82	**24.59**	**14.36**	**79.32**	**73.30**	**103.91**	**87.65**	**338.08**
YMR052C-A	*YMR052c-a*	0.98	1.26	1.48	1.88	2.05	2.16	**11.90**	**2.34**	**54.59**	**25.74**	**66.49**	**28.08**	**313.65**
YMR052W	*FAR3*	1.02	1.26	1.42	1.78	1.98	2.17	**10.07**	**2.17**	**49.91**	**27.14**	**59.97**	**29.30**	**308.38**
YMR053C	*STB2*	0.94	1.18	1.38	2.17	1.93	2.00	**17.60**	**1.22**	**64.10**	**14.14**	**81.70**	**15.36**	**328.65**
YMR054W	*STV1*	0.95	1.26	1.49	1.86	2.02	2.14	**9.87**	**2.81**	**49.23**	**26.18**	**59.10**	**28.98**	**316.57**
YMR055C	*BUB2*	0.96	1.31	1.52	1.90	2.06	2.19	**9.11**	**3.32**	**47.37**	**27.86**	**56.48**	**31.18**	**310.04**
YMR056C	*AAC1*	0.96	1.22	1.47	1.94	1.94	2.14	**7.67**	**1.83**	**42.20**	**18.73**	**49.88**	**20.55**	**296.79**
YMR057C	*YMR057c*	0.97	1.23	1.43	1.83	2.01	2.15	**7.27**	**3.75**	**43.18**	**30.28**	**50.44**	**34.03**	**290.95**
YMR058W	*FET3*	0.95	1.18	1.38	1.75	1.96	2.15	**0.85**	**0.96**	**8.19**	**0.78**	**9.04**	**1.75**	**278.14**
YMR060C	*SAM37*	1.02	1.31	1.42	1.82	2.05	2.22	**24.70**	**14.57**	**66.15**	**52.90**	**90.85**	**67.47**	**327.15**
YMR062C	*ARG7*	0.97	1.44	1.62	1.99	2.14	2.26	**6.24**	**4.69**	**36.51**	**26.46**	**42.74**	**31.15**	**287.76**
YMR063W	*RIM9*	0.97	1.41	1.59	2.09	2.15	2.19	**15.13**	**6.40**	**57.99**	**37.03**	**73.11**	**43.44**	**334.90**
YMR064W	*AEP1*	0.88	0.94	0.96	0.87	0.87	0.83	**126.75**	**125.89**	**150.91**	**113.85**	**277.66**	**239.75**	**432.00**
YMR065W	*KAR5*	0.94	1.36	1.51	1.88	2.03	2.17	**11.91**	**4.99**	**56.22**	**31.76**	**68.13**	**36.75**	**331.82**
YMR066W	*SOV1*	0.98	1.05	1.07	0.99	0.99	0.96	**127.78**	**122.73**	**148.38**	**112.33**	**276.16**	**235.06**	**438.83**
YMR067C	*UBX4*	0.98	1.50	1.71	2.06	2.20	2.28	**19.53**	**12.31**	**68.09**	**55.41**	**87.62**	**67.73**	**324.16**
YMR068W	*AVO2*	0.96	1.41	1.61	2.11	2.08	2.24	**16.53**	**10.38**	**62.35**	**45.84**	**78.88**	**56.22**	**330.18**
YMR069W	*NAT4*	0.92	1.32	1.47	1.84	2.03	2.19	**3.60**	**3.73**	**21.03**	**18.43**	**24.63**	**22.16**	**292.44**
YMR070W	*MOT3*	0.92	1.41	1.65	2.07	2.20	2.30	**5.61**	**3.12**	**37.01**	**10.67**	**42.62**	**13.79**	**298.95**
YMR071C	*TVP18*	1.01	1.41	1.58	2.03	2.17	2.26	**13.45**	**8.31**	**55.10**	**44.40**	**68.55**	**52.71**	**296.04**
YMR072W	*ABF2*	1.02	1.20	1.21	1.16	1.15	1.10	**103.03**	**116.23**	**112.42**	**124.54**	**215.44**	**240.76**	**526.71**
YMR073C	*IRC21*	0.99	1.45	1.68	1.99	2.12	2.19	**11.21**	**9.77**	**55.50**	**50.44**	**66.71**	**60.21**	**318.79**
YMR074C	*YMR074c*	0.99	1.18	1.35	1.83	2.03	2.13	**9.92**	**6.89**	**58.01**	**46.52**	**67.93**	**53.40**	**302.27**
YMR075C-A	*YMR075c-a*	0.98	1.41	1.59	1.95	2.10	2.22	**16.17**	**14.22**	**65.27**	**57.91**	**81.44**	**72.13**	**330.75**
YMR075W	*RCO1*	0.96	1.37	1.56	1.91	2.09	2.21	**9.75**	**12.46**	**48.44**	**52.16**	**58.19**	**64.62**	**313.10**
YMR077C	*VPS20*	0.99	1.43	1.60	1.86	1.97	2.06	**20.05**	**12.27**	**76.66**	**68.00**	**96.71**	**80.27**	**377.96**
YMR078C	*CTF18*	1.07	1.53	1.73	2.10	2.24	2.34	**7.01**	**4.97**	**40.69**	**32.33**	**47.71**	**37.30**	**300.10**
YMR080C	*NAM7*	0.94	1.39	1.57	1.93	2.10	2.21	**11.41**	**8.66**	**54.11**	**39.86**	**65.53**	**48.52**	**302.38**
YMR081C	*ISF1*	0.93	1.37	1.52	1.95	2.13	2.28	**3.28**	**3.30**	**17.94**	**13.54**	**21.22**	**16.83**	**292.30**
YMR082C	*YMR082c*	0.94	1.41	1.59	1.96	2.12	2.13	**4.64**	**3.57**	**31.99**	**19.31**	**36.63**	**22.88**	**299.09**
YMR083W	*ADH3*	0.97	1.44	1.54	1.85	2.03	2.15	**3.80**	**1.80**	**39.19**	**20.11**	**42.99**	**21.91**	**256.37**
YMR084W	*YMR084w*	0.93	1.30	1.43	1.93	2.11	2.24	**14.43**	**7.61**	**57.61**	**39.46**	**72.03**	**47.06**	**325.86**
YMR085W	*YMR085w*	0.94	1.31	1.47	1.92	2.10	2.23	**18.37**	**10.11**	**66.26**	**48.84**	**84.63**	**58.95**	**329.80**
YMR086C-A	*YMR086c-a*	1.04	1.47	1.66	1.96	2.09	2.21	**17.72**	**9.13**	**62.25**	**44.77**	**79.97**	**53.90**	**355.44**
YMR086W	*YMR086w*	0.97	1.46	1.70	2.06	2.20	2.27	**13.77**	**11.73**	**58.97**	**50.25**	**72.74**	**61.99**	**319.44**
YMR087W	*YMR087w*	0.98	1.44	1.61	1.98	2.11	2.23	**10.38**	**9.89**	**50.76**	**48.60**	**61.14**	**58.49**	**316.87**
YMR088C	*VBA1*	0.99	1.44	1.56	1.93	2.06	2.17	**6.83**	**10.87**	**40.20**	**50.41**	**47.03**	**61.27**	**306.46**
YMR089C	*YTA12*	1.02	1.42	1.58	2.07	2.20	2.28	**9.59**	**10.70**	**49.76**	**46.65**	**59.35**	**57.34**	**255.51**
YMR090W	*YMR090w*	0.99	1.43	1.61	2.02	2.21	2.33	**3.00**	**2.99**	**10.39**	**2.91**	**13.39**	**5.90**	**286.21**
YMR091C	*NPL6*	0.94	1.24	1.24	1.39	1.62	1.79	**48.61**	**30.67**	**104.36**	**85.65**	**152.96**	**116.33**	**343.36**
YMR092C	*AIP1*	0.94	1.43	1.60	1.98	2.11	2.20	**14.90**	**12.41**	**60.65**	**54.73**	**75.55**	**67.14**	**332.94**
YMR095C	*SNO1*	0.96	1.35	1.44	1.70	1.87	2.03	**16.43**	**9.82**	**62.36**	**45.70**	**78.79**	**55.52**	**338.74**
YMR096W	*SNZ1*	0.87	1.25	1.42	1.82	1.99	2.12	**15.73**	**7.69**	**59.40**	**40.88**	**75.13**	**48.57**	**338.24**
YMR097C	*MTG1*	0.87	0.94	0.97	0.85	0.85	0.84	**127.28**	**125.58**	**141.72**	**109.04**	**269.00**	**234.62**	**439.88**
YMR098C	*ATP25*	0.93	0.99	1.02	0.92	0.93	0.91	**125.51**	**120.87**	**148.62**	**111.58**	**274.13**	**232.45**	**462.02**
YMR099C	*YMR099c*	0.93	1.41	1.61	1.94	2.09	2.21	**16.56**	**9.52**	**54.37**	**45.39**	**70.92**	**54.90**	**342.84**
YMR100W	*MUB1*	0.94	1.43	1.56	1.88	2.03	2.20	**3.88**	**3.40**	**24.88**	**10.46**	**28.75**	**13.86**	**321.54**
YMR101C	*SRT1*	1.00	1.52	1.69	2.05	2.18	2.27	**12.50**	**7.01**	**48.16**	**35.48**	**60.66**	**42.50**	**319.27**
YMR102C	*YMR102c*	1.04	1.43	1.62	2.04	2.18	2.27	**11.33**	**5.05**	**54.62**	**28.95**	**65.95**	**34.00**	**308.39**
YMR103C	*YMR103c*	0.93	1.41	1.59	1.91	1.91	2.17	**12.56**	**7.04**	**53.67**	**38.84**	**66.24**	**45.88**	**329.06**
YMR104C	*YPK2*	0.90	1.05	1.25	1.71	1.91	2.09	**5.03**	**0.80**	**44.05**	**8.71**	**49.08**	**9.51**	**306.36**
YMR105C	*PGM2*	1.00	1.50	1.68	1.99	2.37	2.41	**10.17**	**5.10**	**48.55**	**30.06**	**58.72**	**35.15**	**325.26**
YMR105W-A	*YMR105w-a*	0.89	1.15	1.32	1.72	1.97	2.15	**1.20**	**2.14**	**15.82**	**19.69**	**17.01**	**21.83**	**251.96**
YMR106C	*YKU80*	0.99	1.48	1.61	1.94	2.09	2.21	**5.85**	**3.64**	**34.51**	**19.38**	**40.36**	**23.01**	**304.05**
YMR107W	*SPG4*	0.91	1.42	1.61	1.96	2.11	2.22	**10.09**	**4.29**	**44.26**	**22.96**	**54.35**	**27.25**	**331.44**
YMR109W	*MYO5*	0.99	1.48	1.69	2.04	2.19	2.28	**10.95**	**5.89**	**50.73**	**32.44**	**61.69**	**38.34**	**294.30**
YMR110C	*HFD1*	0.98	1.45	1.65	1.95	2.08	2.22	**9.12**	**4.74**	**42.47**	**26.38**	**51.59**	**31.12**	**320.08**
YMR111C	*YMR111c*	1.00	1.52	1.71	2.05	2.18	2.30	**4.22**	**3.26**	**24.77**	**11.44**	**28.99**	**14.70**	**300.88**
YMR114C	*YMR114c*	0.97	1.51	1.68	2.03	2.14	2.24	**14.11**	**7.08**	**57.34**	**36.62**	**71.46**	**43.69**	**322.02**
YMR115W	*MGR3*	0.98	1.53	1.72	2.05	2.16	2.24	**18.15**	**12.20**	**61.72**	**51.63**	**79.87**	**63.83**	**344.80**
YMR116C	*ASC1*	0.98	1.37	1.42	1.72	1.90	2.06	**36.75**	**28.24**	**79.88**	**75.65**	**116.63**	**103.89**	**317.82**
YMR118C	*YMR118c*	1.00	1.33	1.54	2.02	2.19	2.27	**17.70**	**1.70**	**68.64**	**24.25**	**86.34**	**25.95**	**368.93**
YMR119W	*ASI1*	0.92	1.06	1.23	1.69	1.89	2.09	**10.06**	**2.83**	**56.28**	**29.46**	**66.34**	**32.29**	**316.13**
YMR119W-A	*YMR119w-a*	0.94	1.40	1.59	1.94	2.08	2.19	**9.70**	**4.81**	**47.19**	**26.74**	**56.89**	**31.55**	**317.27**
YMR120C	*ADE17*	0.98	1.44	1.63	2.02	2.17	2.29	**11.36**	**4.25**	**50.96**	**25.25**	**62.32**	**29.50**	**322.21**
YMR121C	*RPL15b*	0.88	1.28	1.43	1.72	1.85	1.93	**12.97**	**6.53**	**49.59**	**34.68**	**62.55**	**41.20**	**319.99**
YMR122C	*YMR122c*	1.05	1.54	1.75	2.08	2.02	2.26	**13.22**	**7.10**	**54.44**	**38.86**	**67.67**	**45.97**	**330.68**
YMR123W	*PKR1*	1.01	1.39	1.47	1.77	1.91	2.05	**30.98**	**25.41**	**75.84**	**77.50**	**106.81**	**102.92**	**363.29**
YMR124W	*YMR124w*	0.97	1.48	1.67	2.00	2.13	2.24	**4.58**	**3.22**	**30.64**	**14.41**	**35.22**	**17.62**	**295.71**
YMR125W	*STO1*	0.96	1.43	1.60	1.93	2.06	2.19	**8.91**	**6.65**	**45.71**	**37.93**	**54.62**	**44.58**	**313.34**
YMR126C	*DLT1*	1.02	1.55	1.74	2.04	2.14	2.24	**18.79**	**7.52**	**58.73**	**36.71**	**77.52**	**44.23**	**347.97**
YMR127C	*SAS2*	0.96	1.41	1.57	1.89	2.05	2.19	**6.63**	**7.13**	**34.59**	**37.91**	**41.18**	**45.04**	**301.22**
YMR129W	*POM152*	0.96	1.47	1.66	2.02	2.14	2.23	**10.51**	**6.35**	**51.45**	**37.44**	**61.96**	**43.78**	**319.22**
YMR130W	*YMR130w*	1.02	1.60	1.80	2.15	2.26	2.35	**4.95**	**3.28**	**28.04**	**13.40**	**32.99**	**16.68**	**306.11**
YMR132C	*JLP2*	0.95	1.42	1.60	1.94	2.09	2.19	**9.57**	**7.44**	**48.43**	**37.25**	**58.00**	**44.69**	**310.88**
YMR133W	*REC114*	0.94	1.42	1.60	1.95	2.10	2.22	**8.40**	**3.94**	**43.64**	**22.25**	**52.05**	**26.19**	**313.69**
YMR135C	*GID8*	0.99	1.38	1.57	1.95	2.08	2.20	**10.24**	**4.64**	**47.87**	**27.22**	**58.11**	**31.86**	**315.43**
YMR135W-A	*YMR135w-a*	0.90	1.17	1.31	1.70	1.91	2.05	**7.42**	**2.34**	**48.27**	**24.26**	**55.69**	**26.60**	**318.34**
YMR136W	*GAT2*	0.90	1.23	1.32	1.80	2.05	2.22	**9.18**	**3.77**	**52.92**	**30.56**	**62.11**	**34.34**	**321.33**
YMR137C	*PSO2*	0.92	1.11	1.32	1.84	2.02	2.17	**9.89**	**0.84**	**56.21**	**7.77**	**66.10**	**8.61**	**302.99**
YMR138W	*CIN4*	0.90	1.08	1.27	1.75	1.92	2.08	**6.89**	**0.86**	**46.46**	**6.71**	**53.36**	**7.57**	**301.10**
YMR139W	*RIM11*	0.91	1.03	1.15	1.67	1.90	2.12	**3.68**	**0.79**	**47.25**	**5.57**	**50.94**	**6.35**	**289.12**
YMR140W	*SIP5*	0.95	1.11	1.26	1.70	1.95	2.22	**0.10**	**0.97**	**9.29**	**24.94**	**9.39**	**25.91**	**266.59**
YMR141C	*YMR141c*	0.92	1.01	1.09	1.48	1.75	2.05	**0.90**	**0.95**	**30.98**	**28.91**	**31.88**	**29.86**	**296.92**
YMR142C	*RPL13b*	0.92	1.24	1.31	1.72	2.07	2.29	**3.86**	**2.83**	**19.49**	**5.45**	**23.35**	**8.28**	**284.64**
YMR143W	*RPS16a*	0.94	1.02	1.09	1.48	1.80	2.13	**0.23**	**2.35**	**17.81**	**32.87**	**18.04**	**35.22**	**277.40**
YMR143W	*RPS16a*	0.88	1.12	1.19	1.51	1.81	2.06	**13.48**	**2.39**	**64.08**	**23.96**	**77.55**	**26.36**	**298.66**
YMR144W	*YMR144w*	0.89	0.99	1.19	1.71	1.97	2.22	**-0.05**	**0.07**	**0.44**	**1.60**	**0.39**	**1.67**	**253.58**
YMR145C	*NDE1*	1.08	1.37	1.62	2.00	2.17	2.33	**0.13**	**0.21**	**-0.58**	**-1.11**	**-0.45**	**-0.90**	**275.70**
YMR147W	*YMR147w*	0.97	1.18	1.36	1.84	2.06	2.25	**1.21**	**1.81**	**27.19**	**12.21**	**28.40**	**14.02**	**311.32**
YMR148W	*OSW5*	1.00	1.21	1.40	1.83	2.02	2.22	**2.64**	**0.30**	**33.98**	**9.37**	**36.62**	**9.67**	**305.35**
YMR150C	*IMP1*	0.87	1.01	1.02	0.89	0.89	0.85	**122.24**	**125.69**	**126.82**	**127.17**	**249.06**	**252.86**	**524.68**
YMR151W	*YIM2*	1.01	1.25	1.43	1.84	2.02	2.22	**3.70**	**0.54**	**37.63**	**15.24**	**41.32**	**15.78**	**304.68**
YMR152W	*YIM1*	0.95	1.09	1.22	1.63	1.88	2.13	**0.34**	**0.24**	**14.98**	**6.07**	**15.32**	**6.30**	**299.37**
YMR153C-A	*YMR153c-a*	0.97	1.12	1.31	1.78	2.02	2.26	**0.46**	**1.03**	**20.43**	**22.92**	**20.89**	**23.95**	**287.50**
YMR153W	*NUP53*	0.99	1.16	1.35	1.81	2.03	2.24	**0.41**	**0.20**	**20.79**	**4.96**	**21.20**	**5.16**	**291.61**
YMR154C	*RIM13*	0.96	1.51	1.69	2.06	2.19	2.26	**12.94**	**3.17**	**52.52**	**9.44**	**65.46**	**12.61**	**327.51**
YMR155W	*YMR155w*	0.93	1.16	1.39	1.86	2.08	2.28	**11.67**	**0.91**	**57.64**	**22.49**	**69.31**	**23.41**	**339.65**
YMR156C	*TPP1*	0.97	1.16	1.40	1.89	2.10	2.30	**0.57**	**0.24**	**18.22**	**4.90**	**18.79**	**5.14**	**286.83**
YMR157C	*AIM36*	0.94	1.13	1.35	1.77	1.96	2.17	**0.95**	**0.25**	**25.22**	**6.75**	**26.17**	**7.00**	**304.61**
YMR158C-B	*YMR158C-B*	0.98	1.43	1.62	2.01	2.18	2.29	**3.48**	**3.09**	**19.89**	**5.84**	**23.38**	**8.93**	**305.29**
YMR158W	*MRPS8*	0.94	1.30	1.25	1.23	1.42	1.65	**36.30**	**20.93**	**77.07**	**62.52**	**113.38**	**83.44**	**334.88**
YMR158W-A	*Unknown*	0.90	0.92	0.93	0.92	0.96	1.04	**125.59**	**116.03**	**130.24**	**131.00**	**255.83**	**247.03**	**519.65**
YMR159C	*ATG16*	0.97	1.17	1.36	1.82	2.01	2.20	**25.39**	**8.75**	**79.59**	**57.83**	**104.99**	**66.57**	**320.06**
YMR160W	*YMR160w*	0.92	1.06	1.20	1.68	1.88	2.07	**2.93**	**0.90**	**35.40**	**4.73**	**38.33**	**5.63**	**262.63**
YMR161W	*HLJ1*	0.98	1.21	1.40	1.87	2.09	2.29	**4.52**	**0.75**	**45.36**	**18.74**	**49.87**	**19.49**	**316.80**
YMR162C	*DNF3*	0.99	1.23	1.41	1.85	2.02	2.23	**3.92**	**1.04**	**38.30**	**23.73**	**42.22**	**24.77**	**295.97**
YMR163C	*INP2*	0.95	1.12	1.30	1.73	1.94	2.16	**1.06**	**0.16**	**25.17**	**7.88**	**26.23**	**8.04**	**296.76**
YMR164C	*MSS11*	0.94	1.18	1.41	1.84	2.02	2.20	**1.04**	**0.55**	**26.57**	**15.65**	**27.61**	**16.20**	**288.93**
YMR166C	*YMR166c*	0.98	1.15	1.31	1.72	1.96	2.21	**0.09**	**0.12**	**2.30**	**-0.23**	**2.39**	**-0.11**	**286.73**
YMR167W	*MLH1*	0.99	1.19	1.37	1.79	2.00	2.20	**2.12**	**1.21**	**32.81**	**24.14**	**34.93**	**25.35**	**293.08**
YMR169C	*ALD3*	1.01	1.24	1.43	1.81	1.98	2.17	**2.79**	**3.74**	**37.28**	**40.44**	**40.07**	**44.19**	**299.20**
YMR170C	*ALD2*	0.99	1.25	1.49	1.92	2.09	2.26	**3.52**	**1.51**	**42.69**	**29.34**	**46.21**	**30.85**	**301.52**
YMR171C	*EAR1*	0.92	1.34	1.44	1.79	1.97	2.09	**10.73**	**5.20**	**45.13**	**29.62**	**55.86**	**34.82**	**331.08**
YMR172C-A	*YMR172c-a*	0.94	1.08	1.27	1.70	1.90	2.11	**1.65**	**1.51**	**31.99**	**31.07**	**33.64**	**32.58**	**290.97**
YMR172W	*HOT1*	0.94	1.23	1.27	1.67	1.90	2.07	**18.37**	**10.60**	**73.63**	**55.28**	**92.00**	**65.88**	**302.32**
YMR173W	*DDR48*	0.92	1.09	1.28	1.79	1.99	2.17	**8.36**	**0.79**	**50.05**	**8.90**	**58.41**	**9.69**	**309.16**
YMR173W-A	*YMR173w-a*	0.99	1.10	1.24	1.67	1.87	2.11	**0.42**	**0.07**	**28.05**	**11.03**	**28.47**	**11.10**	**299.68**
YMR174C	*PAI3*	0.88	0.94	1.05	1.45	1.70	1.69	**0.33**	**0.17**	**18.16**	**7.70**	**18.49**	**7.87**	**293.36**
YMR174C	*PAI3*	0.98	1.43	1.65	2.01	2.15	2.25	**16.04**	**7.94**	**56.64**	**37.48**	**72.68**	**45.42**	**336.02**
YMR175W	*SIP18*	0.99	1.17	1.34	1.80	2.03	2.28	**0.34**	**1.92**	**13.89**	**6.80**	**14.23**	**8.72**	**282.18**
YMR175W	*SIP18*	0.90	1.24	1.47	1.83	2.03	2.19	**6.09**	**3.42**	**33.05**	**10.34**	**39.14**	**13.76**	**301.81**
YMR175W-A	*YMR175w-a*	0.93	1.20	1.35	1.74	1.93	2.08	**5.86**	**13.20**	**50.75**	**49.20**	**56.61**	**62.40**	**283.35**

ORF.name	Strain	Optical density at 600 nm at regular intervals (h)						GLUCOSE		FRUCTOSE		TOTAL SUGARS (g/l)		TOTAL AMINO ACIDS (mg/L)
		0	26	33	48	59	78	102 h	118 h	102 h	118 h	102 h	118 h	102 h
YMR176W	ECM5	0.95	1.08	1.19	1.63	1.89	2.15	1.68	0.77	31.42	18.94	33.10	19.70	291.91
YMR177W	MMT1	0.98	1.19	1.37	1.81	2.02	2.23	2.34	0.49	32.43	13.49	34.77	13.98	299.40
YMR178W	YMR178w	0.95	1.11	1.23	1.64	1.85	2.07	5.11	0.69	46.86	19.51	51.97	20.21	303.83
YMR179W	SPT21	0.97	1.16	1.36	1.86	2.05	2.23	9.01	2.73	54.98	36.18	63.99	38.91	303.43
YMR180C	CTL1	0.91	1.09	1.28	1.75	1.96	2.16	1.78	2.05	33.90	11.88	35.68	13.93	296.67
YMR181C	YMR181c	0.99	1.43	1.60	2.05	2.21	2.30	13.64	6.21	52.39	34.74	66.03	40.95	327.84
YMR182C	RGM1	0.98	1.20	1.40	1.88	2.11	2.32	1.79	0.18	8.52	0.97	10.30	1.15	285.47
YMR182W-A	YMR182w-a	0.90	1.23	1.39	1.84	2.03	2.18	3.07	6.02	36.90	35.62	39.96	41.64	270.04
YMR183C	SSO2	0.93	1.14	1.33	1.65	1.76	1.91	15.11	12.48	63.88	65.93	78.99	78.42	364.64
YMR184W	ADD37	0.93	1.14	1.11	0.96	1.00	0.95	120.63	122.32	131.65	128.00	252.27	250.32	533.37
YMR186W	HSC82	0.93	1.00	1.11	1.36	1.58	1.83	0.39	2.77	16.24	10.71	16.63	13.48	283.45
YMR187C	YMR187c	0.99	1.22	1.43	1.85	2.04	2.24	0.40	0.55	9.29	6.66	9.69	7.21	281.06
YMR188C	MRPS17	0.96	1.10	1.30	1.87	2.08	2.27	8.48	0.69	56.82	22.63	65.30	23.32	306.00
YMR189W	GCV2	0.95	1.20	1.39	1.82	2.05	2.26	0.08	0.03	1.72	-0.84	1.80	-0.81	278.96
YMR190C	SGS1	0.99	1.20	1.39	1.97	2.20	2.38	7.14	5.51	52.50	51.90	59.64	57.40	308.33
YMR191W	SPG5	1.00	1.15	1.29	1.74	1.99	2.26	0.72	0.60	14.75	7.22	15.48	7.82	264.70
YMR191W	SPG5	0.94	1.15	1.34	1.83	2.02	2.18	0.92	0.80	14.28	0.90	15.21	1.70	287.79
YMR192W	GYL1	1.02	1.26	1.49	1.94	2.12	2.30	3.43	0.33	41.46	14.05	44.89	14.39	278.34
YMR193C-A	YMR193c-a	0.96	1.16	1.36	1.85	2.04	2.22	0.64	0.37	21.45	14.25	22.09	14.62	271.40
YMR193W	MRPL24	1.01	1.19	1.38	1.81	2.02	2.23	1.25	0.66	26.71	19.39	27.95	20.05	284.61
YMR194C-A	YMR194c-a	0.98	1.34	1.52	1.86	2.04	2.17	17.85	6.82	56.28	32.15	74.13	38.98	338.86
YMR194C-B	CMC4	0.92	1.21	1.32	1.73	1.94	2.08	2.37	6.22	30.61	36.43	32.98	42.65	263.50
YMR194W	RPL36a	0.97	1.13	1.31	1.81	2.02	2.24	1.60	0.15	30.95	8.41	32.56	8.56	284.17
YMR195W	ICY1	0.94	1.19	1.43	1.92	2.11	2.26	2.64	0.43	26.04	14.45	28.68	14.87	285.46
YMR196W	YMR196w	0.97	1.17	1.36	1.83	2.04	2.26	0.61	0.34	22.07	15.04	22.68	15.38	287.70
YMR198W	CIK1	0.96	1.06	1.10	1.31	1.50	1.74	49.96	42.12	102.97	104.58	152.93	146.70	407.03
YMR198W	CIK1	0.92	0.98	1.01	1.25	1.44	1.67	43.37	24.43	104.12	87.67	147.49	112.10	348.81
YMR199W	CLN1	0.95	1.16	1.37	1.80	2.03	2.27	0.06	0.00	5.55	1.12	5.61	1.12	280.53
YMR201C	RAD14	0.93	1.06	1.21	1.72	1.95	2.19	5.19	2.02	47.80	26.83	52.99	28.85	286.33
YMR202W	ERG2	1.02	1.23	1.42	1.85	2.05	2.25	6.86	0.46	52.34	12.27	59.20	12.74	308.78
YMR202W	ERG2	0.88	1.09	1.14	1.20	1.27	1.34	40.08	29.56	93.46	63.45	133.54	93.01	407.20
YMR204C	INP1	1.04	1.30	1.55	2.00	2.19	2.37	0.55	0.22	8.41	2.65	8.96	2.87	274.96
YMR205C	PFK2	1.01	1.23	1.43	1.93	2.11	2.29	4.30	0.49	44.91	16.84	49.22	17.32	291.63
YMR206W	YMR206w	1.01	1.24	1.41	1.80	2.03	2.25	0.40	0.38	13.54	5.34	13.94	5.71	271.78
YMR207C	HFA1	0.95	1.21	1.41	1.83	2.05	2.28	0.10	0.15	11.79	1.19	11.88	1.33	272.85
YMR209C	YMR209c	0.92	1.36	1.53	1.94	2.10	2.19	18.83	8.16	57.70	39.95	76.53	48.10	351.91
YMR210W	YMR210w	0.95	1.14	1.35	1.85	2.05	2.25	0.58	0.15	18.87	4.11	19.45	4.25	280.04
YMR214W	SCJ1	0.99	1.22	1.44	1.91	2.11	2.31	0.10	0.16	4.79	1.05	4.89	1.21	263.73
YMR215W	GAS3	0.99	1.10	1.20	1.56	1.76	1.96	10.13	2.87	60.22	41.84	70.35	44.71	305.70
YMR216C	SKY1	0.94	1.17	1.42	1.89	2.07	2.23	2.62	0.36	38.36	13.51	40.98	13.87	315.98
YMR219W	ESC1	0.95	1.15	1.38	1.84	2.10	2.48	0.72	0.26	20.81	9.95	21.52	10.21	278.12
YMR221C	FMP42	0.98	1.20	1.44	1.89	2.06	2.24	1.99	0.60	35.56	20.82	37.55	21.42	287.68
YMR222C	FSH2	1.00	1.14	1.35	1.84	2.06	2.27	2.67	0.62	41.22	23.65	43.89	24.27	296.07
YMR223W	UBP8	0.97	1.14	1.30	1.73	1.95	2.17	5.46	0.22	44.93	11.38	50.39	11.59	296.12
YMR224C	MRE11	0.96	1.06	1.10	1.33	1.49	1.72	61.83	48.16	110.03	110.58	171.85	158.73	413.00
YMR225C	MRPL44	0.97	1.20	1.42	1.85	2.03	2.21	2.44	0.15	34.19	7.80	36.63	7.95	304.15
YMR226C		0.98	1.25	1.49	1.94	2.10	2.28	4.20	1.77	45.16	15.62	49.36	17.39	304.58
YMR226C	YMR226c	0.86	1.15	1.27	1.61	1.80	1.90	11.62	4.72	58.29	38.16	69.92	42.87	311.67
YMR230W	RPS10b	0.95	1.07	1.19	1.64	1.90	2.15	0.76	0.05	24.87	6.10	25.63	6.15	282.16
YMR230W-A	YMR230w-a	0.89	1.21	1.36	1.75	1.94	2.08	1.23	2.21	14.71	25.12	15.94	27.33	251.43
YMR230W-A	YMR230w-a	0.92	1.24	1.39	1.81	2.01	2.16	9.99	5.10	50.36	36.29	60.35	41.39	301.70
YMR231W	PEP5	0.98	1.21	1.42	1.89	2.10	2.29	1.13	0.01	21.19	1.37	22.32	1.38	292.46
YMR232W	FUS2	0.91	1.06	1.24	1.71	1.94	2.18	0.68	0.01	11.41	1.98	12.09	1.99	275.61
YMR233W	TRI1	0.95	1.14	1.34	1.79	2.03	2.25	0.14	0.09	8.97	1.29	9.11	1.38	281.16
YMR234W	RNH1	0.93	1.08	1.26	1.73	1.97	2.20	0.02	0.13	6.01	2.43	6.03	2.56	271.45
YMR237W	BCH1	0.94	1.07	1.23	1.67	1.91	2.16	0.92	0.18	24.94	8.84	25.87	9.01	298.78
YMR238W	DFG5	0.97	1.07	1.21	1.63	1.87	2.10	2.95	0.29	40.66	13.78	43.60	14.06	271.12
YMR241W	YHM2	0.91	1.08	1.29	1.78	1.96	2.17	6.24	1.27	47.30	25.66	53.54	26.93	314.88
YMR242C	RPL20a	0.98	1.10	1.18	1.63	1.91	2.18	10.69	3.09	61.34	41.37	72.03	44.46	312.94
YMR242W-A	YMR242w-a	0.90	1.11	1.15	1.41	1.78	2.03	3.55	8.32	41.22	43.29	44.76	51.61	235.74
YMR243C	ZRC1	1.02	1.17	1.33	1.83	2.03	2.23	4.04	2.09	41.42	21.38	45.46	23.48	295.87
YMR244C-A	YMR244c-a	0.95	1.08	1.22	1.62	1.85	2.10	0.19	0.03	17.35	5.87	17.55	5.90	286.16
YMR244W	YMR244w	0.95	1.08	1.23	1.68	1.91	2.13	5.73	0.45	49.48	17.02	55.21	17.47	299.83
YMR245W	YMR245w	0.96	1.07	1.23	1.73	1.99	2.23	1.50	0.07	30.01	3.85	31.51	3.91	302.63
YMR246W	FAA4	1.07	1.28	1.48	1.91	2.13	2.33	0.77	0.08	26.86	10.11	27.63	10.19	305.18
YMR247C	RKR1	0.93	1.04	1.18	1.64	1.88	2.14	-0.08	0.04	10.69	3.50	10.61	3.53	285.32
YMR247W-A	YMR247w-a	0.85	1.05	1.18	1.52	1.75	1.90	1.68	1.61	25.95	19.58	27.62	21.18	272.23
YMR250W	GAD1	0.99	1.19	1.42	1.89	2.07	2.27	5.76	2.22	44.93	20.88	50.69	23.10	307.86
YMR251W	GTO3	1.03	1.28	1.50	1.88	2.06	2.25	3.75	0.36	43.16	17.38	46.92	17.75	304.36
YMR251W-A	HOR7	0.95	1.04	1.18	1.58	1.86	1.91	15.52	4.82	69.37	44.35	84.90	49.17	333.67
YMR252C	YMR252c	1.02	1.21	1.41	1.83	2.06	2.26	3.76	0.58	40.99	17.83	44.75	18.41	312.39
YMR253C	YMR253c	1.05	1.44	1.70	2.08	2.26	2.36	2.04	0.18	28.43	5.61	30.47	5.79	300.67
YMR254C	YMR254c	0.96	1.29	1.52	1.90	2.11	2.24	12.52	3.87	59.21	35.97	71.73	39.84	332.36
YMR255W	GFD1	1.03	1.39	1.63	2.01	2.19	2.30	12.92	2.64	57.58	30.94	70.51	33.58	313.16
YMR256C		1.01	1.13	1.13	1.11	1.19	1.57	93.20	90.26	121.36	123.12	214.55	213.38	434.77
YMR256C	COX7	0.87	1.19	1.21	1.06	1.06	1.02	127.53	125.29	131.68	125.60	259.21	250.89	524.99
YMR257C	PET111	0.96	1.08	1.07	1.05	1.06	1.13	127.28	116.13	135.73	120.11	263.01	236.25	535.67
YMR258C	YMR258c	1.02	1.31	1.52	1.95	2.13	2.26	12.30	1.98	60.20	13.54	72.50	15.52	334.57
YMR259C	YMR259c	1.01	1.31	1.52	1.95	2.14	2.29	15.29	0.80	61.93	21.25	77.23	22.04	336.06
YMR261C	TPS3	0.98	1.24	1.47	1.99	2.18	2.36	13.88	0.95	66.13	18.48	80.01	19.43	309.86
YMR262W	YMR262w	0.98	1.24	1.41	1.94	2.25	2.40	4.02	1.22	41.16	22.92	45.18	24.14	300.89
YMR263W	SAP30	0.89	1.27	1.43	1.74	1.91	2.01	9.04	1.55	65.15	25.77	74.19	27.32	287.39
YMR264W	CUE1	1.04	1.32	1.59	2.00	2.16	2.31	9.18	3.34	51.21	52.50	60.39	55.85	338.67
YMR265C	YMR265c	1.03	1.27	1.51	1.93	2.11	2.30	6.13	4.25	47.23	39.38	53.36	43.63	314.11
YMR266W	RSN1	1.02	1.33	1.57	1.95	2.15	2.42	8.50	5.48	51.03	41.55	59.53	47.03	316.50
YMR267W	PPA2	0.91	1.19	1.17	0.99	0.98	0.94	129.08	126.11	130.49	125.37	259.57	251.48	530.16
YMR269W	TMA23	0.94	1.21	1.31	1.73	2.00	2.20	1.33	0.82	9.32	1.04	10.65	1.86	242.77
YMR269W	TMA23	1.01	1.30	1.53	1.96	2.22	2.30	19.35	8.81	68.37	50.31	87.72	59.12	339.22
YMR271C	URA10	1.01	1.53	1.72	2.11	2.24	2.32	13.01	3.98	51.41	21.95	64.42	25.93	342.08
YMR272C	SCS7	1.04	1.30	1.49	1.93	2.13	2.34	0.60	2.04	16.73	11.16	17.33	13.21	265.72
YMR272W-B	YMR272w-b	0.93	1.20	1.39	1.82	2.05	2.19	6.58	5.11	50.57	32.54	57.15	37.65	285.79
YMR273C	ZDS1	0.99	1.31	1.56	1.97	2.13	2.29	7.80	0.58	49.29	12.32	57.09	12.90	318.17
YMR274C	RCE1	0.96	1.32	1.57	1.95	2.09	2.27	18.61	3.94	67.07	37.34	85.68	41.28	336.98
YMR275C	BUL1	0.98	1.22	1.38	1.78	1.97	2.16	10.41	0.92	57.83	20.26	68.24	21.18	278.40
YMR276W	DSK2	0.98	1.22	1.44	1.91	2.09	2.28	3.58	0.87	31.38	12.97	34.96	13.84	300.32
YMR278W	PGM3	0.95	1.22	1.41	1.87	2.07	2.26	0.45	0.48	15.32	12.09	15.77	12.57	294.70
YMR279C	YMR279c	0.92	1.43	1.59	1.95	2.11	2.21	17.20	7.82	57.72	37.82	74.93	45.64	343.06
YMR280C	CAT8	1.01	1.30	1.50	2.00	2.16	2.32	9.63	6.47	56.15	42.56	65.78	49.02	301.04
YMR282C	AEP2	1.05	1.28	1.55	2.00	2.17	2.34	16.67	7.52	65.65	48.47	82.32	56.00	341.14
YMR283C	RIT1	1.00	1.29	1.58	1.97	2.16	2.12	4.59	2.15	41.25	23.18	45.84	25.32	316.20
YMR284W	YKU70	1.00	1.26	1.49	1.94	2.13	2.33	2.74	0.90	32.67	17.35	35.41	18.25	290.74
YMR285C	NGL2	1.03	1.29	1.49	1.90	2.08	2.28	6.74	1.10	47.76	23.16	54.50	24.26	306.89
YMR286W	MRPL33	0.86	1.20	1.18	1.02	0.99	0.94	120.51	123.94	122.99	124.92	243.50	248.86	518.86
YMR287C	DSS1	0.81	1.04	1.03	0.85	0.85	0.85	119.92	125.36	122.95	123.54	242.88	248.90	532.49
YMR289W	ABZ2	0.98	1.22	1.43	1.86	2.03	2.23	13.69	1.64	62.28	26.51	75.97	28.15	328.43
YMR291W	YMR291w	1.02	1.34	1.59	1.99	2.14	2.30	8.81	0.55	72.03	36.14	80.85	36.69	311.28
YMR292W	GOT1	0.97	1.23	1.45	1.90	2.08	2.26	7.60	0.22	51.18	9.69	58.78	9.91	309.76
YMR293C	HER2	0.92	1.22	1.21	1.02	1.01	0.99	125.47	121.76	130.63	125.65	256.10	247.41	525.99
YMR294W	JNM1	0.96	1.12	1.21	1.57	1.77	2.02	26.73	12.82	83.09	63.41	109.82	76.23	319.74
YMR294W-A	YMR294w-a	1.00	1.26	1.41	1.90	2.10	2.28	1.67	1.55	32.06	24.73	33.73	26.28	287.53
YMR295C	YMR295c	0.92	1.25	1.44	1.85	2.08	2.25	1.55	1.26	6.63	1.00	8.18	2.26	246.03
YMR297W	PRC1	1.00	1.32	1.58	1.98	2.17	2.35	0.56	2.57	17.23	7.86	17.79	10.43	290.19
YMR299C	DYN3	1.00	1.22	1.41	1.78	1.98	2.20	23.35	10.10	75.96	56.35	99.30	66.45	340.25
YMR300C	ADE4	1.02	1.07	1.08	1.06	1.09	1.15	120.41	123.07	130.14	131.17	250.55	254.24	536.68
YMR300C	ADE4	0.92	1.21	1.21	1.17	1.29	1.33	105.00	103.31	127.12	126.81	232.12	230.12	497.35
YMR302C	YME2	1.03	1.33	1.57	1.97	2.14	2.32	4.13	1.08	43.03	20.53	47.16	21.61	312.96
YMR303C	ADH2	1.07	1.43	1.68	2.11	2.27	2.43	3.46	0.88	25.98	7.01	29.44	7.89	289.47
YMR304C-A	YMR304c-a	0.99	1.29	1.54	1.96	2.13	2.30	6.22	0.61	48.84	15.94	55.06	16.55	312.00
YMR304W	UBP15	0.97	1.21	1.44	1.89	2.05	2.23	19.32	6.18	70.57	40.78	89.89	46.96	346.07
YMR305C	SCW10	1.00	1.21	1.41	1.86	2.06	2.23	16.22	2.46	67.59	33.07	83.81	35.53	331.18
YMR306C-A	YMR306c-a	0.95	1.17	1.38	1.86	2.06	2.26	6.55	1.22	46.85	21.37	53.39	22.59	303.28
YMR306W	FKS3	0.86	1.34	1.41	1.82	1.99	2.09	18.32	7.64	56.84	38.28	75.16	45.93	349.42
YMR307W	GAS1	0.96	1.03	1.03	1.06	1.16	1.49	64.16	49.81	111.75	100.03	175.91	149.84	388.16
YMR310C	YMR310c	1.00	1.21	1.36	1.87	2.10	2.27	0.81	2.12	29.19	25.70	30.00	27.82	283.99
YMR311C	GLC8	0.92	1.47	1.68	2.06	2.18	2.23	17.32	6.64	58.91	38.30	76.23	44.93	328.29
YMR312W	ELP6	0.90	1.37	1.46	1.86	2.02	2.11	28.48	19.59	70.53	61.03	99.00	80.62	363.79
YMR313C	TGL3	0.86	1.38	1.55	1.88	2.03	2.11	15.34	7.76	54.92	39.44	70.26	47.20	345.97
YMR315W	YMR315w	1.00	1.42	1.47	1.88	2.06	2.16	17.39	5.74	58.69	34.00	76.09	39.74	340.10
YMR315W-A	YMR315w-a	0.89	1.13	1.29	1.73	1.96	2.13	8.33	2.53	56.07	25.36	64.40	27.89	293.82
YMR316C-A	YMR316c-a	0.93	1.38	1.58	1.92	1.91	2.13	9.78	4.05	49.75	26.59	59.53	30.64	306.44
YMR316C-B	YMR316c-b	0.88	1.33	1.53	1.92	1.87	2.15	16.76	5.48	61.09	33.67	77.85	39.15	339.48
YMR316W	DIA1	0.94	1.33	1.46	1.83	1.99	2.16	14.58	3.61	59.45	22.39	74.03	26.00	346.32
YMR317W	YMR317w	0.89	1.35	1.52	1.89	2.02	2.15	12.11	6.11	53.85	32.30	65.96	38.41	321.13
YMR318C	ADH6	0.88	1.29	1.47	1.85	2.01	2.15	10.21	3.29	48.67	15.48	58.87	18.77	316.98

ORF.name	Strain	Optical density at 600 nm at regular intervals (h)						GLUCOSE		FRUCTOSE		TOTAL SUGARS (g/l)		TOTAL AMINO ACIDS (mg/L)
		0	26	33	48	59	78	102 h	118 h	102 h	118 h	102 h	118 h	102 h
YMR319C	FET4	0.92	1.38	1.60	1.99	2.13	2.24	11.90	4.77	51.43	27.98	63.33	32.75	318.48
YMR320W	YMR320w	0.92	1.42	1.61	2.00	2.14	2.25	7.17	2.88	41.15	9.95	48.32	12.84	303.44
YMR322C	SNO4	0.87	1.01	1.17	1.68	1.88	2.07	6.09	0.78	48.31	5.16	54.41	5.94	304.03
YMR326C	YMR326c	0.91	1.29	1.50	1.87	2.03	2.16	7.79	3.88	34.79	13.88	42.58	17.75	318.37
YNL001W	DOM34	0.91	1.20	1.36	1.71	1.89	2.03	28.79	21.78	86.12	79.25	114.91	101.03	366.95
YNL003C	PET8	0.89	1.11	1.34	1.75	1.95	2.10	1.09	0.71	5.72	2.27	6.81	2.98	282.09
YNL004W	HRB1	0.91	1.23	1.44	1.81	1.99	2.11	20.66	10.16	78.60	56.30	99.26	66.46	340.78
YNL005C	MRP7	0.91	1.18	1.32	1.71	1.89	2.02	8.38	2.90	54.59	30.57	62.98	33.47	294.42
YNL008C	ASI3	0.92	1.26	1.46	1.83	2.00	2.13	8.74	4.06	55.82	38.93	64.56	42.99	316.32
YNL009W	IDP3	0.93	1.26	1.48	1.86	2.04	2.17	15.10	5.82	67.30	48.33	82.40	54.14	336.09
YNL010W	YNL010w	0.92	1.20	1.38	1.77	1.97	2.10	20.80	6.13	77.37	49.44	98.18	55.57	348.28
YNL011C	YNL011c	0.97	1.31	1.52	1.90	2.10	2.27	1.27	0.59	10.04	2.51	11.31	3.10	256.90
YNL012W	SPO1	0.92	1.23	1.44	1.82	2.01	2.13	19.56	5.94	70.05	44.23	89.61	50.17	321.50
YNL013C	YNL013c	0.93	1.26	1.48	1.86	2.03	2.15	18.44	5.24	69.68	44.40	88.12	49.64	339.80
YNL014W	HEF3	0.96	1.32	1.56	1.94	2.10	2.20	8.39	1.19	45.74	18.11	54.13	19.30	309.15
YNL015W	PBI2	0.98	1.26	1.44	1.74	1.92	2.06	13.35	5.54	65.04	47.65	78.39	53.19	333.33
YNL016W	PUB1	0.95	1.47	1.68	2.06	2.22	2.30	1.86	3.21	22.88	31.57	24.74	34.79	266.59
YNL020C	ARK1	0.91	1.24	1.43	1.80	1.98	2.12	21.66	8.51	75.17	54.90	96.83	63.41	314.90
YNL021W	HDA1	0.91	1.25	1.44	1.86	2.07	2.22	4.85	1.66	39.34	20.00	44.19	21.66	319.21
YNL022C	YNL022c	0.95	1.35	1.58	1.93	2.10	2.20	11.87	6.75	59.44	47.99	71.31	54.74	338.62
YNL023C	FAP1	0.93	1.25	1.43	1.76	1.94	2.07	22.85	12.21	75.54	59.44	98.39	71.65	347.85
YNL024C	YNL024c	0.97	1.33	1.55	1.91	2.08	2.21	13.08	5.96	61.66	46.76	74.74	52.72	332.18
YNL025C	SSN8	0.91	1.13	1.20	1.41	1.66	1.91	32.77	22.18	89.91	76.07	122.68	98.25	347.52
YNL027W	CRZ1	0.90	1.21	1.39	1.74	1.93	2.08	24.25	18.11	81.82	70.59	106.07	88.70	307.79
YNL028W	YNL028w	0.91	1.26	1.46	1.79	1.97	2.10	7.38	4.10	50.85	39.10	58.23	43.20	306.76
YNL029C	KTR5	0.93	1.24	1.43	1.82	2.01	2.14	23.96	11.58	82.41	63.25	106.37	74.83	295.68
YNL030W	HHF2	0.91	1.17	1.28	1.58	1.80	1.97	32.90	17.43	91.71	71.01	124.60	88.44	253.19
YNL031C	HHT2	0.95	1.25	1.44	1.84	2.02	2.14	18.49	7.27	72.38	49.54	90.87	56.81	257.17
YNL032W	SIW14	0.99	1.38	1.54	1.88	2.06	2.20	16.65	5.81	77.61	53.08	94.26	58.89	322.53
YNL034W	YNL034w	0.95	1.31	1.50	1.91	2.08	2.19	15.21	10.00	64.37	55.13	79.57	65.13	339.94
YNL035C	YNL035c	0.91	1.25	1.40	1.71	1.92	2.08	10.83	2.79	55.79	29.82	66.62	32.60	335.55
YNL037C	IDH1	0.96	1.34	1.55	1.88	2.04	2.15	19.42	9.18	69.40	53.98	88.83	63.16	349.16
YNL040W	YNL040w	0.94	1.36	1.55	1.94	2.10	2.25	3.20	2.77	33.94	25.99	37.14	28.76	274.64
YNL041C	COG6	0.94	1.24	1.41	1.68	1.85	1.98	20.75	9.58	76.05	52.37	96.80	61.95	344.62
YNL042W-B	YNL042w-b	0.93	1.20	1.37	1.83	2.07	2.22	7.94	1.80	55.80	22.55	63.74	24.35	293.35
YNL043C	YNL043c	0.98	1.42	1.68	2.01	2.15	2.24	16.94	8.14	75.55	48.00	92.49	56.14	325.84
YNL044W	YIP3	0.94	1.29	1.49	1.82	2.00	2.13	11.36	7.47	64.21	48.44	75.57	55.91	315.79
YNL045W	LAP2	0.96	1.30	1.48	1.84	2.02	2.16	20.24	10.65	77.15	54.62	97.39	65.27	321.62
YNL046W	YNL046w	0.92	1.25	1.42	1.77	1.95	2.09	23.58	13.34	75.62	60.30	99.21	73.64	338.34
YNL047C	SLM2	1.02	1.29	1.48	1.99	2.13	2.27	0.52	3.08	20.27	26.19	20.79	29.27	288.52
YNL049C	SFB2	0.87	1.13	1.26	1.58	1.79	1.96	27.18	12.55	84.21	58.82	111.39	71.37	336.78
YNL050C	YNL050c	0.97	1.22	1.33	1.71	1.91	2.06	30.73	17.39	93.09	72.93	123.82	90.32	287.16
YNL051W	COG5	0.99	1.14	1.36	1.95	2.14	2.28	10.09	1.76	60.30	28.52	70.39	30.28	273.92
YNL052W	COX5a	1.03	1.07	1.16	1.67	1.94	2.16	9.46	1.17	57.24	21.89	66.70	23.06	300.32
YNL053W	MSG5	1.01	1.27	1.44	1.97	2.20	2.35	0.52	0.02	20.58	2.97	21.09	2.98	279.89
YNL054W	VAC7	0.88	1.18	1.36	1.75	1.96	2.14	9.41	1.92	57.81	29.68	67.22	31.60	292.71
YNL055C	POR1	0.92	1.21	1.32	1.74	1.96	2.13	4.53	1.20	41.77	5.09	46.30	6.29	284.13
YNL055C	POR1	0.82	1.04	1.08	1.35	1.65	1.86	3.29	1.19	32.44	4.21	35.73	5.41	280.67
YNL056W	OCA2	1.06	1.22	1.44	2.02	2.25	2.42	2.04	0.67	11.08	3.34	13.12	4.01	288.75
YNL057W	YNL057w	0.96	1.23	1.43	2.01	2.00	2.10	5.06	1.82	46.10	28.42	51.15	30.24	283.22
YNL058C	YNL058c	0.91	1.22	1.45	1.79	1.95	2.12	12.27	2.40	59.70	30.04	71.96	32.44	297.32
YNL059C	ARP5	0.92	1.17	1.28	1.60	1.83	2.03	0.99	0.50	7.14	0.74	8.12	1.24	273.64
YNL063W	MTQ1	0.92	1.25	1.38	1.77	1.95	2.10	20.87	8.00	71.36	51.58	92.24	59.59	314.36
YNL064C	YDJ1	0.89	1.14	1.19	1.47	1.83	2.18	27.64	14.94	84.65	70.62	112.29	85.55	316.91
YNL065W	AQR1	1.01	1.13	1.31	1.89	2.10	2.28	2.90	1.24	34.64	19.05	37.54	20.29	294.68
YNL066W	SUN4	0.99	1.09	1.28	1.92	2.13	2.29	8.35	3.70	54.60	41.12	62.96	44.81	295.59
YNL067W	RPL9b	1.00	1.18	1.39	2.00	2.22	2.37	2.84	0.77	38.65	10.73	41.49	11.50	296.53
YNL067W-B	YNL067w-b	0.94	1.22	1.39	1.76	2.02	2.20	0.93	0.63	9.12	2.41	10.05	3.04	261.19
YNL068C	FKH2	0.93	1.31	1.51	1.95	2.15	2.29	1.86	1.28	20.75	9.97	22.62	11.25	268.58
YNL069C	RPL16b	0.92	1.21	1.29	1.55	1.75	1.92	18.10	6.75	69.11	49.26	87.20	56.00	298.14
YNL069C	RPL16b	0.89	1.12	1.19	1.51	1.74	1.89	13.54	2.92	68.11	26.91	81.65	29.83	330.70
YNL070W	TOM7	0.89	0.99	1.15	1.78	1.92	1.98	0.91	0.68	10.11	1.59	11.02	2.27	281.37
YNL071W	LAT1	0.91	0.98	1.13	1.70	1.92	2.13	11.80	0.86	67.74	13.51	79.54	14.37	291.04
YNL072W	RNH201	0.99	1.14	1.32	1.89	2.06	2.24	15.52	1.45	71.43	23.13	86.95	24.58	304.78
YNL073W	MSK1	0.98	1.17	1.16	1.22	1.58	1.86	15.35	8.60	70.38	52.14	85.73	60.74	250.63
YNL074C	MLF3	0.95	1.09	1.26	1.76	1.93	2.13	21.42	9.48	80.84	59.30	102.27	68.78	305.50
YNL076W	MKS1	0.89	1.21	1.35	1.77	1.99	2.14	10.14	5.78	58.10	41.86	68.24	47.64	310.97
YNL077W	APJ1	0.92	1.28	1.42	1.69	1.83	1.97	24.43	14.08	75.72	60.75	100.16	74.83	300.06
YNL078W	NIS1	1.08	1.18	1.31	1.88	2.09	2.27	18.55	7.22	73.28	53.77	91.84	60.99	298.01
YNL079C	TPM1	0.94	1.02	1.13	1.63	1.92	2.11	11.14	2.07	60.37	27.39	71.51	29.46	306.04
YNL080C	EOS1	1.02	1.12	1.26	1.81	2.07	2.28	3.52	0.96	35.64	14.12	39.16	15.08	286.60
YNL081C	SWS2	0.97	1.41	1.64	2.02	2.18	2.30	1.43	1.23	12.20	5.53	13.62	6.75	262.67
YNL082W	PMS1	1.01	1.06	1.15	1.67	1.90	2.12	45.27	34.30	106.29	89.80	151.56	124.10	288.44
YNL083W	SAL1	0.96	1.10	1.29	1.85	2.04	2.20	3.66	2.12	38.99	15.67	42.64	17.79	269.30
YNL084C	END3	0.93	1.15	1.34	1.73	1.94	2.10	1.15	0.90	9.10	1.36	10.24	2.27	270.80
YNL085W	MKT1	0.96	1.13	1.32	1.86	2.02	2.18	7.06	1.06	52.91	20.10	59.97	21.16	300.82
YNL086W	YNL086w	1.00	1.20	1.37	1.77	1.99	2.21	0.13	-0.02	15.86	-0.11	15.99	-0.13	292.66
YNL087W	TCB2	0.96	1.18	1.39	1.99	2.16	2.32	9.38	1.26	55.25	23.20	64.63	24.46	310.14
YNL089C	YNL089c	1.04	1.34	1.61	2.01	2.18	2.31	15.34	7.57	62.95	47.86	78.29	55.44	351.74
YNL089C	YNL089c	0.90	1.24	1.40	1.66	1.82	1.99	2.00	0.90	31.40	15.67	33.40	16.56	315.20
YNL090W	RHO2	0.95	1.13	1.31	2.03	1.98	2.14	8.73	0.78	54.69	14.88	63.41	15.66	319.95
YNL090W	RHO2	0.95	1.23	1.40	1.85	2.03	2.14	8.73	1.26	56.71	16.05	65.44	17.31	303.81
YNL091W	NST1	0.96	1.11	1.28	1.78	1.96	2.10	6.12	0.76	50.40	12.48	56.56	13.23	335.18
YNL092W	YNL092w	0.94	1.37	1.61	1.97	2.13	2.23	6.19	1.98	45.41	27.64	51.60	29.62	304.96
YNL093W	YPT53	0.98	1.13	1.29	1.79	1.98	2.19	2.04	0.77	35.59	15.53	37.63	16.29	343.43
YNL094W	APP1	0.89	1.23	1.44	1.84	2.02	2.21	0.82	0.70	11.22	6.65	12.04	7.35	292.59
YNL095C	YNL095c	0.90	1.06	1.23	1.77	1.98	2.14	11.87	3.25	65.16	38.52	77.03	41.77	335.81
YNL096C	RPS7b	1.02	1.26	1.39	1.94	2.17	2.30	4.42	0.19	44.75	12.76	49.17	12.95	303.01
YNL096C	RPS7b	0.95	1.16	1.39	1.92	2.14	2.29	9.16	1.18	52.53	16.49	61.69	17.67	301.35
YNL097C	PHO23	0.92	1.15	1.42	1.89	2.06	2.18	11.54	6.34	64.89	58.34	76.43	64.68	147.25
YNL097C-A	YNL097c-a	0.92	1.23	1.40	1.78	2.00	2.15	16.69	14.06	72.28	50.16	88.97	64.22	298.37
YNL098C	RAS2	0.92	1.25	1.45	1.84	2.01	2.17	10.69	7.06	61.16	52.61	71.85	59.68	341.88
YNL099C	OCA1	1.05	1.17	1.36	1.94	2.15	2.30	5.26	1.17	48.21	21.54	53.47	22.71	319.27
YNL100W	AIM37	1.01	1.12	1.29	1.88	2.10	2.26	8.34	4.37	59.34	43.35	67.68	47.72	315.92
YNL101W	AVT4	0.90	1.24	1.45	1.82	2.01	2.15	2.17	1.29	30.51	21.32	32.68	22.61	244.40
YNL104C	LEU4	1.00	1.24	1.48	1.99	2.14	2.27	4.26	1.95	43.98	30.37	48.24	32.32	319.42
YNL105W	YNL105w	1.07	1.20	1.37	1.88	2.05	2.23	9.49	3.56	59.54	36.00	69.03	39.56	308.97
YNL106C	INP52	0.98	1.12	1.29	1.75	1.93	2.11	6.84	1.06	52.35	21.55	59.18	22.61	332.41
YNL107W	YAF9	0.98	1.01	1.06	1.44	1.76	1.84	40.93	23.74	88.32	73.65	129.25	97.39	268.91
YNL108C	YNL108c	0.90	1.19	1.39	1.79	2.01	2.14	8.25	2.13	51.84	30.28	60.09	32.41	285.61
YNL109W	YNL109w	0.91	1.07	1.26	1.74	1.94	2.12	2.56	0.75	32.98	7.01	35.54	7.75	300.32
YNL111C	CYB5	0.91	1.07	1.24	1.62	1.86	2.04	0.79	0.79	2.98	6.19	3.77	6.97	263.28
YNL115C	YNL115c	1.01	1.12	1.24	1.80	2.02	2.23	18.10	3.63	69.88	42.23	87.98	45.86	309.51
YNL116W	DMA2	0.96	1.27	1.51	1.91	2.12	2.25	4.24	2.74	40.43	32.62	44.66	35.37	317.54
YNL117W	MLS1	0.92	1.29	1.49	1.97	2.13	2.24	5.80	1.48	46.68	24.94	52.47	26.41	247.97
YNL119W	NCS2	1.02	1.16	1.33	1.88	2.13	2.30	0.79	0.55	13.65	1.69	14.44	2.24	321.22
YNL120C	YNL120c	0.98	1.08	1.20	1.72	1.95	2.14	16.50	6.80	70.18	48.58	86.68	55.38	304.94
YNL121C	TOM70	0.99	1.09	1.22	1.77	2.00	2.19	21.62	11.07	73.87	62.26	95.49	73.34	314.29
YNL122C	YNL122c	0.92	1.26	1.44	1.82	2.05	2.15	3.35	1.03	40.41	19.00	43.76	20.03	328.36
YNL123W	NMA111	0.91	1.25	1.39	1.72	1.93	2.07	9.62	2.76	54.82	33.25	64.44	36.01	240.65
YNL125C	ESBP6	1.00	1.13	1.31	1.91	2.12	2.27	16.49	7.56	73.24	54.43	89.73	62.00	306.27
YNL127W	FAR11	0.89	1.22	1.34	1.66	1.86	2.00	11.27	3.28	62.12	41.10	73.40	44.39	321.48
YNL128W	TEP1	0.93	1.33	1.56	1.91	2.07	2.21	3.02	0.92	35.83	14.31	38.85	15.23	301.78
YNL129W	NRK1	0.91	1.31	1.51	1.89	2.07	2.23	1.52	0.87	20.17	7.08	21.68	7.95	266.33
YNL130C	CPT1	1.00	1.21	1.42	1.82	1.99	2.17	22.93	6.07	72.55	45.24	95.47	51.31	307.79
YNL130C-A	DGR1	0.98	1.28	1.40	1.71	1.94	2.10	3.34	4.22	38.00	32.51	41.34	36.74	275.11
YNL133C	FYV6	0.98	1.42	1.65	2.02	2.14	2.25	5.76	3.03	46.75	27.20	52.50	30.23	261.31
YNL134C	YNL134c	0.89	1.31	1.58	1.97	2.13	2.23	5.22	2.30	43.36	30.54	48.58	32.83	277.81
YNL135C	FPR1	0.90	1.19	1.29	1.55	1.77	1.95	5.07	1.84	46.03	28.38	51.10	30.22	303.09
YNL136W	EAF7	0.91	1.21	1.32	1.60	1.80	2.00	8.65	2.76	50.89	29.90	59.55	32.66	263.38
YNL138W	SRV2	0.89	1.05	1.23	1.76	1.96	2.14	1.13	0.82	17.19	6.19	18.32	7.01	268.53
YNL139C	THO2	0.86	1.15	1.30	1.64	1.85	2.02	10.35	4.82	57.06	42.51	67.41	47.33	268.81
YNL140C	YNL140c	0.92	1.04	1.17	1.65	1.84	2.02	20.13	13.27	73.01	66.50	93.15	79.76	336.70
YNL141W	AAH1	0.97	1.21	1.37	1.87	1.96	2.10	10.37	4.65	57.10	42.01	67.47	46.66	266.77
YNL142W	MEP2	0.86	0.97	1.10	1.63	1.86	2.03	2.80	3.06	34.84	32.07	37.64	35.14	288.73
YNL143C	YNL143c	0.89	1.19	1.28	1.71	1.94	2.10	4.98	0.81	45.59	16.99	50.57	17.81	301.09
YNL144C	YNL144c	0.88	1.18	1.32	1.66	1.86	2.04	2.51	1.10	28.62	15.79	31.13	16.89	305.92
YNL145W	MFA2	0.93	1.20	1.33	1.63	1.88	2.02	5.76	1.86	48.79	30.40	54.55	32.26	313.39
YNL146C-A	YNL146c-a	0.92	1.22	1.38	1.77	1.99	2.14	4.06	3.95	43.85	29.80	47.91	33.76	277.34
YNL146W	YNL146w	0.93	1.30	1.49	1.84	2.04	2.15	13.34	2.27	58.34	27.83	71.68	30.10	299.38
YNL147W	LSM7	0.88	1.15	1.12	1.07	1.23	1.52	54.12	32.39	115.35	72.97	169.47	105.36	350.39
YNL147W	LSM7	1.02	1.26	1.29	1.37	1.60	1.90	39.45	22.19	95.69	61.88	135.14	84.07	335.13
YNL148C	ALF1	0.97	1.49	1.64	2.00	2.12	2.23	34.84	27.76	79.17	72.30	114.00	100.06	400.04
YNL153C	GIM3	0.97	1.21	1.39	1.91	2.01	2.12	1.22	0.83	12.42	2.86	13.64	3.69	245.01

ORF.name	Strain	Optical density at 600 nm at regular intervals (h)						GLUCOSE		FRUCTOSE		TOTAL SUGARS (g/l)		TOTAL AMINO ACIDS (mg/L)
		0	26	33	48	59	78	102 h	118 h	102 h	118 h	102 h	118 h	102 h
YNL154C	YCK2	0.97	1.47	1.59	1.95	2.11	2.23	12.30	4.49	48.80	25.77	61.10	30.26	332.03
YNL155W	YNL155w	0.98	1.40	1.49	1.89	2.08	2.21	12.70	3.97	53.69	29.18	66.38	33.14	326.03
YNL156C	NSG2	0.95	1.38	1.51	1.90	2.06	2.17	21.77	6.95	66.41	40.10	88.18	47.05	360.16
YNL157W	IGO1	1.01	1.49	1.64	2.01	2.15	2.26	10.05	5.30	49.65	35.76	59.70	41.06	321.85
YNL159C	ASI2	1.00	1.49	1.66	2.01	2.16	2.26	23.94	13.89	65.59	54.37	89.53	68.25	371.28
YNL160W	YGP1	0.91	1.22	1.20	1.03	1.02	0.98	136.27	130.04	143.40	142.64	279.67	272.68	534.54
YNL162W	RPL42a	0.98	1.52	1.72	2.01	2.11	2.17	27.72	25.58	71.64	72.85	99.36	98.43	362.93
YNL162W	RPL42a	0.93	1.21	1.34	1.69	1.91	2.05	12.74	1.36	59.88	17.73	72.63	19.09	297.20
YNL162W-A	YNL162w-a	0.84	1.05	1.13	1.59	1.87	2.09	1.08	1.04	6.46	11.17	7.55	12.21	247.32
YNL164C	IBD2	0.97	1.37	1.40	1.88	2.07	2.20	9.65	6.13	49.38	38.49	59.04	44.61	307.61
YNL165W	YNL165w	0.91	1.39	1.48	1.90	2.07	2.18	18.60	11.74	60.14	50.80	78.75	62.54	339.91
YNL166C	BNI5	0.86	1.16	1.11	1.27	1.78	1.98	22.87	16.68	65.78	55.58	88.66	72.26	346.78
YNL167C	SKO1	0.92	1.36	1.43	1.77	1.92	2.05	23.52	16.43	67.36	57.22	90.88	73.65	366.17
YNL168C	FMP41	0.94	1.39	1.47	1.86	2.05	2.20	10.14	5.87	48.16	32.52	58.30	38.39	322.09
YNL169C	PSD1	0.98	1.58	1.73	2.08	2.19	2.30	7.68	3.14	40.50	13.14	48.18	16.28	301.27
YNL170W	YNL170w	0.96	1.28	1.24	1.18	1.19	1.23	91.89	88.37	108.49	105.18	200.38	193.55	471.44
YNL171C	YNL171c	0.96	1.37	1.38	1.53	1.70	1.83	69.80	63.81	100.39	95.06	170.19	158.87	456.17
YNL173C	MDG1	0.96	1.48	1.60	1.99	2.15	2.28	11.63	5.05	50.78	28.56	62.42	33.61	326.88
YNL175C	NOP13	0.91	1.36	1.46	1.83	2.01	2.16	3.24	3.02	19.07	10.81	22.32	13.83	285.07
YNL176C	YNL176c	0.97	1.43	1.59	1.95	2.10	2.19	21.31	14.56	66.17	55.93	87.49	70.49	351.67
YNL177C	MRPL22	0.93	1.22	1.22	1.33	1.75	2.13	47.26	30.44	104.15	88.07	151.41	118.52	303.11
YNL179C	YNL179c	1.00	1.32	1.40	1.82	2.01	2.18	6.87	2.99	44.63	4.65	51.50	7.64	316.91
YNL183C	NPR1	0.95	1.40	1.54	1.99	2.15	2.27	3.32	2.93	21.60	1.83	24.92	4.76	318.23
YNL184C	YNL184c	0.98	1.29	1.14	1.15	1.15	1.11	121.36	119.38	130.58	129.17	251.94	248.55	529.12
YNL187W	SWT21	0.95	1.45	1.54	1.92	2.06	2.19	20.29	10.13	69.88	47.30	90.17	57.43	344.91
YNL190W	YNL190w	0.95	1.43	1.59	1.99	2.12	2.25	7.57	4.22	41.79	27.69	49.36	31.91	329.70
YNL191W	DUG3	0.92	1.33	1.42	1.82	1.98	2.15	8.95	3.65	46.00	20.90	54.96	24.56	325.97
YNL192W	CHS1	1.05	1.51	1.64	2.03	2.19	2.31	21.39	10.17	68.17	52.16	89.56	62.33	331.46
YNL193W	YNL193w	0.94	1.46	1.58	1.92	2.09	2.23	4.79	2.92	32.95	2.26	37.73	5.18	311.67
YNL194C	YNL194c	0.91	1.44	1.52	1.86	2.02	2.13	15.79	3.46	61.03	20.17	76.82	23.63	327.98
YNL195C	YNL195c	0.93	1.45	1.55	1.91	2.07	2.19	16.61	4.06	62.16	25.91	78.77	29.97	345.59
YNL196C	SLZ1	0.94	1.29	1.40	1.73	1.88	2.02	33.95	17.24	81.66	61.59	115.61	78.83	380.80
YNL197C	WHI3	0.98	1.38	1.47	1.89	2.08	2.22	15.13	9.80	60.52	46.46	75.65	56.26	296.71
YNL198C	YNL198c	0.93	1.37	1.48	1.93	2.14	2.29	9.47	4.43	51.53	29.32	61.00	33.74	311.14
YNL199C	GCR2	0.97	1.45	1.54	2.03	2.21	2.34	12.58	7.91	55.39	43.86	67.97	51.77	327.46
YNL200C	YNL200c	1.00	1.54	1.64	2.06	2.20	2.34	6.43	4.01	40.93	21.37	47.37	25.38	319.72
YNL201C	PSY2	0.94	1.46	1.64	2.00	2.11	2.22	12.17	8.58	52.61	45.46	64.78	54.04	328.43
YNL202W	SPS19	1.04	1.49	1.61	2.00	2.17	2.29	8.75	5.42	48.37	33.16	57.13	38.58	327.08
YNL203C	YNL203c	0.96	1.50	1.62	1.99	2.11	2.25	13.70	5.73	53.96	34.98	67.66	40.71	343.42
YNL204C	SPS18	0.91	1.41	1.52	1.82	2.00	2.15	2.83	3.09	6.21	1.65	9.04	4.74	287.16
YNL205C	YNL205c	0.98	1.60	1.79	2.14	2.25	2.35	2.99	3.02	13.35	3.99	16.33	7.00	283.30
YNL206C	RTT106	0.95	1.49	1.59	2.00	2.15	2.30	4.59	3.02	31.36	7.30	35.94	10.32	291.46
YNL208W	YNL208w	1.01	1.58	1.72	2.08	2.21	2.34	2.94	3.20	8.57	10.73	11.50	13.94	282.83
YNL209W	SSB2	1.01	1.35	1.49	1.88	2.07	2.22	4.43	1.16	42.23	14.91	46.67	16.07	286.88
YNL211C	YNL211c	0.91	1.33	1.47	1.88	2.05	2.22	3.20	3.08	18.73	11.81	21.93	14.89	296.38
YNL212W	VID27	0.95	1.38	1.44	1.91	2.07	2.21	15.93	9.31	62.41	50.99	78.35	60.29	334.68
YNL213C	RRG9	0.93	1.26	1.19	1.12	1.10	1.04	111.64	109.72	121.84	121.66	233.48	231.39	525.71
YNL214W	PEX17	0.89	1.39	1.47	1.84	1.99	2.13	21.63	13.24	68.92	58.66	90.56	71.90	341.38
YNL215W	IES2	0.93	1.35	1.34	1.70	1.85	2.02	37.63	28.00	88.27	79.33	125.90	107.33	360.75
YNL217W	YNL217w	0.93	1.38	1.49	1.87	2.01	2.17	11.45	6.82	54.65	38.03	66.07	44.85	322.35
YNL218W	MGS1	0.88	1.14	1.20	1.58	1.78	1.95	13.14	1.30	63.82	11.35	76.97	12.65	311.84
YNL219C	ALG9	1.09	1.56	1.76	2.17	2.31	2.40	18.63	11.07	65.72	53.99	84.35	65.06	342.62
YNL220W	ADE12	1.12	1.12	1.29	1.38	1.44	1.52	1.51	1.56	-1.31	-1.28	0.20	0.28	411.15
YNL220W	ADE12	1.03	1.03	1.17	1.24	1.29	1.38	1.26	1.45	-1.51	-1.19	-0.25	0.27	512.96
YNL220W	ADE12	0.89	0.97	0.99	1.04	1.08	1.17	198.72	153.66	148.55	140.86	347.27	294.52	490.72
YNL220W	ADE12	0.94	1.00	1.04	1.08	1.13	1.22	162.39	148.72	148.65	142.82	311.04	291.54	505.32
YNL220W	ADE12	0.96	1.04	1.07	1.11	1.14	1.25	158.96	167.49	141.35	138.34	300.31	305.82	487.72
YNL220W	ADE12	1.08	1.20	1.25	1.32	1.35	1.47	163.43	132.57	139.21	115.82	302.64	248.39	501.22
YNL220W	ADE12	1.01	1.11	1.08	1.07	1.11	1.19	117.06	130.67	126.45	141.94	243.51	272.61	523.04
YNL220W	ADE12	0.94	0.98	1.00	1.03	1.07	1.15	133.57	125.89	140.77	141.97	274.33	267.86	531.32
YNL220W	ADE12	1.05	1.24	1.30	1.33	1.40	1.51	116.30	109.25	129.09	125.95	245.38	235.20	517.88
YNL220W	ADE12	1.04	1.17	1.24	1.29	1.36	1.49	119.64	117.78	134.85	132.83	254.49	250.61	519.52
YNL220W	ADE12	1.04	1.29	1.32	1.36	1.45	1.57	117.35	132.94	130.39	141.68	247.74	274.62	512.38
YNL220W	ADE12	0.93	1.11	1.13	1.14	1.20	1.33	113.67	130.92	130.00	141.28	243.67	272.21	519.70
YNL220W	ADE12	1.01	1.13	1.16	1.26	1.29	1.35	109.59	109.55	119.47	123.25	229.07	232.80	519.67
YNL220W	ADE12	1.06	1.20	1.20	1.28	1.33	1.40	126.10	113.88	137.47	129.27	263.57	243.15	528.36
YNL220W	ADE12	0.99	1.12	1.12	1.21	1.24	1.32	118.49	121.85	133.69	137.18	252.18	259.03	527.84
YNL220W	ADE12	1.01	1.09	1.11	1.19	1.24	1.31	130.05	128.78	133.22	142.21	263.27	270.99	537.99
YNL220W	ADE12	1.00	1.15	1.15	1.26	1.29	1.37	124.08	107.70	133.48	117.16	257.56	224.86	519.25
YNL220W	ADE12	1.07	1.19	1.21	1.30	1.36	1.41	112.34	105.60	127.11	114.48	239.45	220.09	502.92
YNL220W	ADE12	0.94	1.02	1.01	1.08	1.13	1.15	115.75	114.60	119.06	119.59	234.81	234.19	504.47
YNL220W	ADE12	0.95	1.07	1.08	1.17	1.23	1.24	119.33	127.67	126.21	133.38	245.54	261.05	523.09
YNL220W	ADE12	1.02	1.17	1.18	1.29	1.35	1.35	114.38	115.30	117.95	122.33	232.34	237.63	520.65
YNL220W	ADE12	0.98	1.06	1.07	1.15	1.19	1.25	116.17	109.28	120.64	119.35	236.82	228.63	524.65
YNL220W	ADE12	1.00	1.13	1.14	1.26	1.33	1.32	124.01	116.60	132.71	126.21	256.72	242.81	524.28
YNL220W	ADE12	0.93	1.04	1.03	1.14	1.17	1.18	130.26	126.56	138.77	132.46	269.03	259.02	529.80
YNL220W	ADE12	0.96	1.11	1.12	1.22	1.28	1.28	116.24	108.63	117.39	111.09	233.63	219.73	516.48
YNL220W	ADE12	0.99	1.13	1.13	1.22	1.27	1.28	108.15	112.10	115.70	118.26	223.85	230.35	511.78
YNL220W	ADE12	0.96	1.08	1.10	1.19	1.22	1.27	120.58	115.34	119.53	114.23	240.12	229.56	514.59
YNL220W	ADE12	1.02	1.16	1.18	1.28	1.34	1.37	122.98	133.43	123.98	129.03	246.96	262.45	509.67
YNL220W	ADE12	1.05	1.26	1.28	1.38	1.45	1.45	4.64	130.55	39.32	140.00	43.96	270.55	524.08
YNL220W	ADE12	1.00	1.15	1.16	1.27	1.32	1.33	116.20	142.42	126.82	153.66	243.01	296.08	566.78
YNL220W	ADE12	0.97	1.13	1.13	1.23	1.29	1.25	127.15	120.86	137.35	138.03	264.51	259.48	570.85
YNL220W	ADE12	0.98	1.09	1.09	1.19	1.26	1.24	120.90	110.31	139.20	128.58	260.10	238.89	533.61
YNL220W	ADE12	1.02	1.16	1.15	1.27	1.33	1.33	122.46	123.22	134.90	137.00	257.36	260.22	535.54
YNL220W	ADE12	0.97	1.09	1.11	1.21	1.24	1.27	117.73	117.15	133.91	132.45	251.64	249.59	522.53
YNL220W	ADE12	1.00	1.17	1.17	1.28	1.33	1.32	126.57	129.22	139.39	143.24	265.96	272.45	519.73
YNL220W	ADE12	0.94	1.12	1.13	1.21	1.25	1.26	126.93	142.35	142.19	156.71	269.12	299.06	528.69
YNL220W	ADE12	0.98	1.14	1.14	1.27	1.33	1.29	118.93	117.06	133.50	134.59	252.43	251.64	532.72
YNL220W	ADE12	1.07	1.24	1.26	1.40	1.47	1.43	122.55	109.21	137.49	125.24	260.04	234.44	543.65
YNL220W	ADE12	0.97	1.04	1.03	1.14	1.21	1.19	121.85	118.26	132.29	130.59	254.14	248.86	540.71
YNL220W	ADE12	1.00	1.11	1.12	1.22	1.26	1.25	128.83	126.77	139.60	140.52	268.44	267.29	542.34
YNL220W	ADE12	1.05	1.16	1.16	1.24	1.28	1.34	116.89	109.28	125.64	121.17	242.52	230.45	519.22
YNL220W	ADE12	1.05	1.13	1.12	1.25	1.29	1.32	116.49	110.33	126.37	122.69	242.86	233.02	518.73
YNL220W	ADE12	0.93	1.03	1.04	1.07	1.10	1.14	137.05	122.10	146.41	132.76	283.45	254.86	518.20
YNL220W	ADE12	0.97	1.09	1.09	1.16	1.20	1.18	126.31	145.41	136.96	149.14	263.27	294.55	529.43
YNL220W	ADE12	0.96	1.03	1.02	1.06	1.09	1.14	119.11	113.26	124.30	120.97	243.41	234.23	506.84
YNL220W	ADE12	1.00	1.21	1.18	1.26	1.30	1.24	118.82	116.20	126.66	126.82	245.48	243.01	510.52
YNL220W	ADE12	0.99	1.15	1.16	1.17	1.19	1.20	131.55	115.75	130.31	117.38	261.86	233.13	494.57
YNL220W	ADE12	1.03	1.18	1.17	1.25	1.30	1.29	118.05	123.68	126.39	129.27	244.43	252.95	504.16
YNL220W	ADE12	0.85	0.99	0.96	0.95	0.96	0.97	96.90	103.28	106.74	117.45	203.64	220.73	507.08
YNL220W	ADE12	0.86	1.00	0.97	0.95	0.98	0.98	95.16	93.31	112.55	110.25	207.71	203.56	520.08
YNL220W	ADE12	1.00	1.20	1.18	1.21	1.24	1.25	103.32	107.03	113.22	120.80	216.55	227.84	524.89
YNL220W	ADE12	1.02	1.22	1.22	1.25	1.27	1.28	101.09	112.96	118.36	131.14	219.45	244.10	525.20
YNL220W	ADE12	0.94	1.16	1.12	1.17	1.22	1.22	94.11	97.20	108.58	108.87	202.69	206.07	517.95
YNL220W	ADE12	0.93	1.14	1.10	1.14	1.19	1.15	93.40	93.91	110.57	112.83	203.97	206.75	514.71
YNL220W	ADE12	1.04	1.41	1.38	1.41	1.45	1.44	99.72	100.64	115.72	115.83	215.44	216.47	516.53
YNL220W	ADE12	1.01	1.36	1.35	1.37	1.38	1.36	106.33	100.24	124.40	119.09	230.73	219.33	520.80
YNL220W	ADE12	0.99	1.29	1.30	1.29	1.31	1.27	102.17	93.57	116.50	109.74	218.67	203.31	513.59
YNL220W	ADE12	1.01	1.35	1.36	1.32	1.34	1.30	101.99	91.26	121.14	109.50	223.13	200.76	522.65
YNL220W	ADE12	0.99	1.36	1.19	1.26	1.30	1.32	103.14	115.16	118.07	131.01	221.21	246.16	507.19
YNL220W	ADE12	1.01	1.39	1.22	1.30	1.33	1.30	103.18	102.76	121.94	120.51	225.12	223.27	521.79
YNL220W	ADE12	0.89	1.11	1.09	1.08	1.10	1.10	93.98	93.81	110.20	108.86	204.18	202.67	507.81
YNL220W	ADE12	0.95	1.31	1.31	1.31	1.37	1.29	92.77	93.32	109.35	109.43	202.12	202.75	510.44
YNL220W	ADE12	0.97	1.24	1.22	1.24	1.27	1.25	113.71	96.78	126.85	108.14	240.56	204.92	511.80
YNL220W	ADE12	1.05	1.36	1.39	1.40	1.42	1.39	114.95	98.18	132.41	114.19	247.36	212.37	518.65
YNL220W	ADE12	0.91	1.15	1.15	1.14	1.17	1.16	96.12	103.89	109.09	115.12	205.20	219.00	522.61
YNL220W	ADE12	0.91	1.31	1.28	1.27	1.33	1.22	99.21	92.34	113.82	107.51	213.02	199.85	521.10
YNL220W	ADE12	0.97	1.30	1.30	1.29	1.31	1.29	94.30	105.67	104.92	115.34	199.22	221.02	520.93
YNL220W	ADE12	1.17	1.43	1.47	1.50	1.52	1.48	96.07	111.08	108.63	120.96	204.70	232.03	520.13
YNL220W	ADE12	0.95	1.21	1.21	1.21	1.25	1.23	96.94	96.34	108.28	107.32	205.22	203.66	514.37
YNL220W	ADE12	0.94	1.17	1.21	1.17	1.21	1.19	95.03	93.94	104.76	104.38	199.79	198.32	518.57
YNL220W	ADE12	0.96	1.27	1.30	1.34	1.37	1.33	99.62	97.92	102.84	106.68	202.46	204.59	512.90
YNL220W	ADE12	1.04	1.53	1.68	2.05	2.18	2.27	25.00	7.48	68.05	46.32	93.05	53.80	362.21
YNL220W	ADE12	0.94	1.13	1.13	1.04	1.05	1.03	102.18	102.48	110.01	107.51	212.18	209.99	543.83
YNL220W	ADE12	0.93	1.18	1.19	1.17	1.20	1.19	95.81	94.64	103.45	102.74	199.26	197.38	515.47
YNL220W	ADE12	1.01	1.24	1.31	1.30	1.36	1.35	125.76	121.39	131.43	129.81	257.19	251.20	407.36
YNL220W	ADE12	1.00	1.25	1.32	1.31	1.36	1.34	127.25	127.10	134.18	136.91	261.43	264.01	379.29
YNL220W	ADE12	0.96	1.24	1.24	1.26	1.33	1.29	142.74	160.18	147.30	162.74	290.04	322.92	410.75
YNL220W	ADE12	0.98	1.25	1.26	1.26	1.33	1.30	136.74	133.74	146.16	142.90	282.90	276.64	356.64
YNL220W	ADE12	0.96	1.26	1.26	1.24	1.27	1.28	134.99	120.80	145.05	132.12	280.04	252.92	427.93
YNL220W	ADE12	1.05	1.31	1.36	1.36	1.40	1.39	123.71	118.97	134.00	130.39	257.70	249.36	408.84
YNL220W	ADE12	0.92	1.15	1.20	1.15	1.20	1.19	122.68	152.85	131.45	156.26	254.13	309.11	411.72
YNL220W	ADE12	1.00	1.26	1.27	1.24	1.29	1.27	152.70	149.61	156.67	151.18	309.37	300.79	343.94

ORF.name	Strain	Optical density at 600 nm at regular intervals (h)						GLUCOSE		FRUCTOSE		TOTAL SUGARS (g/l)		TOTAL AMINO ACIDS (mg/L)
		0	26	33	48	59	78	102 h	118 h	102 h	118 h	102 h	118 h	102 h
YNL220W	ADE12	0.85	1.10	1.12	1.08	1.15	1.17	103.75	92.37	128.09	123.32	231.84	215.69	286.35
YNL220W	ADE12	0.92	1.08	1.17	1.11	1.16	1.12	122.88	120.67	129.80	129.80	252.68	250.47	423.99
YNL220W	ADE12	0.92	0.93	0.97	1.07	1.10	1.09	145.34	124.43	151.62	130.12	296.96	254.55	208.24
YNL220W	ADE12	1.05	1.09	1.14	1.26	1.31	1.30	147.34	145.19	151.06	149.83	298.40	295.02	384.68
YNL220W	ADE12	0.92	0.96	0.99	1.03	1.08	1.08	128.43	121.12	133.00	128.48	261.43	249.60	371.77
YNL220W	ADE12	0.94	0.98	1.01	1.04	1.11	1.08	119.57	117.61	129.06	125.25	248.63	242.86	424.76
YNL220W	ADE12	0.92	0.97	1.00	1.08	1.11	1.08	127.10	155.03	132.87	156.98	259.97	312.01	343.62
YNL220W	ADE12	0.92	1.00	1.02	1.03	1.08	1.09	137.63	122.85	141.91	131.88	279.54	254.74	433.22
YNL220W	ADE12	0.98	1.05	1.11	1.15	1.19	1.19	126.10	122.55	131.53	128.57	257.63	251.12	417.31
YNL220W	ADE12	1.00	1.08	1.14	1.18	1.26	1.20	123.24	122.13	130.97	131.07	254.21	253.19	467.37
YNL220W	ADE12	0.86	0.92	0.96	0.96	1.00	0.99	139.52	148.93	142.03	149.43	281.54	298.36	410.76
YNL220W	ADE12	0.93	1.11	1.30	1.83	1.95	2.01	12.93	3.80	62.15	36.69	75.08	40.49	311.82
YNL220W	ADE12	1.00	1.18	1.21	1.13	1.24	1.21	127.57	129.69	131.74	132.24	259.31	261.93	435.00
YNL220W	ADE12	1.05	1.25	1.29	1.30	1.35	1.34	120.30	117.45	125.32	121.70	245.62	239.15	478.01
YNL220W	ADE12	0.96	1.09	1.15	1.13	1.21	1.19	137.62	139.52	137.26	138.57	274.87	278.09	408.44
YNL220W	ADE12	0.98	1.10	1.17	1.16	1.23	1.21	136.25	142.12	138.09	144.59	274.34	286.71	458.80
YNL220W	ADE12	0.95	1.06	1.09	1.07	1.11	1.12	120.16	111.74	123.07	116.49	243.23	228.24	468.06
YNL220W	ADE12	1.02	1.20	1.29	1.59	1.81	1.98	34.05	13.90	82.16	60.37	116.20	74.27	382.38
YNL220W	ADE12	0.98	1.10	1.18	1.14	1.17	1.17	116.08	112.48	137.49	106.21	253.57	218.69	496.51
YNL220W	ADE12	0.98	1.09	1.14	1.10	1.15	1.16	117.55	114.25	146.64	110.71	264.19	224.95	478.50
YNL220W	ADE12	0.93	1.15	1.14	1.10	1.14	1.15	118.79	115.24	147.26	114.19	266.04	229.44	512.85
YNL220W	ADE12	0.92	1.12	1.17	1.11	1.14	1.14	115.67	33.22	140.37	9.43	256.04	42.66	513.37
YNL220W	ADE12	0.94	1.14	1.15	1.08	1.11	1.12	116.85	116.74	124.63	95.35	241.48	212.09	517.28
YNL220W	ADE12	0.92	1.08	1.13	1.02	1.06	1.08	125.36	120.59	106.79	140.74	232.16	261.33	497.01
YNL220W	ADE12	0.91	1.05	1.11	1.01	1.03	1.06	119.29	122.78	124.68	138.94	243.97	261.72	509.86
YNL220W	ADE12	0.97	1.15	1.23	1.15	1.21	1.20	126.62	118.81	145.66	143.57	272.29	262.39	511.57
YNL220W	ADE12	0.90	1.25	1.25	1.13	1.16	1.16	110.12	120.88	132.20	142.97	242.32	263.85	507.09
YNL220W	ADE12	0.94	1.28	1.29	1.18	1.22	1.21	132.00	120.46	145.87	141.62	277.88	262.08	518.36
YNL220W	ADE12	0.94	1.18	1.20	1.13	1.16	1.18	123.24	121.26	146.62	142.07	269.85	263.33	516.38
YNL220W	ADE12	0.88	1.21	1.24	1.20	1.25	1.25	115.23	111.55	126.86	129.47	242.09	241.02	498.93
YNL220W	ADE12	0.97	1.14	1.15	1.10	1.15	1.15	113.76	115.47	134.67	131.80	248.44	247.28	518.41
YNL220W	ADE12	0.89	1.12	1.14	1.07	1.11	1.12	118.66	111.55	135.57	130.02	254.23	241.58	513.07
YNL220W	ADE12	0.89	1.26	1.26	1.23	1.28	1.28	118.23	113.11	132.96	124.73	251.19	237.84	496.62
YNL220W	ADE12	0.92	1.17	1.18	1.13	1.20	1.17	121.36	116.79	136.37	132.53	257.73	249.32	508.11
YNL220W	ADE12	0.98	1.19	1.24	1.14	1.23	1.22	116.62	114.52	135.36	131.63	251.99	246.15	521.01
YNL220W	ADE12	0.91	1.17	1.21	1.15	1.18	1.18	112.61	114.82	129.00	125.68	241.62	240.51	508.30
YNL220W	ADE12	0.91	1.15	1.17	1.08	1.13	1.09	115.93	119.48	123.61	129.59	239.54	249.07	517.53
YNL220W	ADE12	0.91	1.17	1.21	1.11	1.14	1.11	118.69	114.97	135.28	127.59	253.97	242.56	523.75
YNL220W	ADE12	0.87	1.13	1.15	1.07	1.09	1.06	119.49	119.68	122.30	123.45	241.79	243.14	506.50
YNL220W	ADE12	0.92	1.16	1.19	1.13	1.16	1.12	121.35	116.97	121.45	120.40	242.80	237.37	507.28
YNL220W	ADE12	0.90	1.18	1.20	1.11	1.16	1.16	120.96	113.43	131.70	118.91	252.66	232.34	519.84
YNL220W	ADE12	0.87	1.07	1.07	0.95	1.05	1.00	114.74	117.12	119.46	118.75	234.21	235.88	507.94
YNL220W	ADE12	0.88	1.07	1.06	0.98	1.04	0.96	113.23	119.55	120.19	125.23	233.42	244.78	516.31
YNL220W	ADE12	0.94	1.15	1.16	1.11	1.18	1.12	120.51	114.82	130.51	118.17	251.02	232.98	521.42
YNL223W	ATG4	0.93	1.37	1.50	1.87	2.04	2.15	19.33	3.92	66.72	25.80	86.05	29.71	326.31
YNL224C	SQS1	0.96	1.40	1.52	1.86	2.03	2.16	10.05	3.48	56.90	19.94	66.95	23.43	339.12
YNL225C	CNM67	0.96	1.04	1.07	1.02	1.09	1.28	53.94	41.36	113.39	81.20	167.33	122.56	338.76
YNL226W	YNL226w	0.98	1.41	1.51	1.93	2.10	2.25	3.11	3.21	12.07	7.56	15.18	10.77	273.67
YNL227C	JJJ1	0.93	1.37	1.44	1.82	1.97	2.13	19.08	3.26	66.54	13.32	85.62	16.58	345.34
YNL228W	YNL228w	0.92	1.32	1.40	1.81	1.98	2.13	9.69	7.70	52.93	43.67	62.62	51.37	307.56
YNL229C	URE2	0.96	1.42	1.46	1.86	2.14	2.25	15.76	7.39	64.26	46.09	80.02	53.49	327.45
YNL230C	ELA1	0.96	1.45	1.59	1.98	2.13	2.25	14.93	5.48	59.22	35.14	74.15	40.62	342.93
YNL231C	PDR16	0.93	1.46	1.58	1.95	2.10	2.25	3.93	3.05	25.05	8.04	28.98	11.09	303.32
YNL233W	BNI4	0.95	1.44	1.54	1.99	2.15	2.29	17.77	11.48	65.56	54.11	83.33	65.59	306.29
YNL234W	YNL234w	0.95	1.43	1.54	1.91	2.04	2.17	18.60	12.15	62.00	49.27	80.60	61.42	329.87
YNL235C	YNL235c	1.00	1.52	1.64	2.11	2.25	2.37	11.53	6.29	55.38	40.37	66.90	46.65	327.81
YNL236W	SIN4	0.98	1.43	1.53	1.98	2.14	2.27	26.53	12.47	75.90	55.11	102.42	67.58	349.52
YNL237W	YTP1	0.98	1.44	1.63	2.03	2.19	2.30	14.63	3.15	56.97	10.91	71.59	14.06	336.97
YNL238W	KEX2	0.94	1.29	1.42	1.83	2.02	2.14	3.70	3.45	22.83	5.22	26.53	8.68	304.98
YNL239W	LAP3	0.90	1.32	1.44	1.84	2.04	2.23	4.70	3.11	28.39	9.59	33.10	12.70	286.93
YNL241C	ZWF1	1.00	1.52	1.71	2.10	2.24	2.36	3.30	3.26	18.67	12.78	21.97	16.04	287.86
YNL242W	ATG2	1.03	1.49	1.69	2.06	2.18	2.27	17.55	17.75	63.85	61.34	81.40	79.09	306.60
YNL246W	VPS75	0.94	1.24	1.42	1.87	2.08	2.25	1.63	0.50	33.37	15.50	35.00	16.00	303.31
YNL248C	RPA49	1.00	1.22	1.32	1.80	2.10	2.29	7.35	1.60	51.55	28.49	58.89	30.09	285.93
YNL249C	MPA43	0.98	1.36	1.61	1.99	2.16	2.27	0.25	0.32	12.55	4.74	12.80	5.06	274.98
YNL250W	RAD50	0.95	1.32	1.38	1.64	1.81	2.00	46.00	34.38	95.60	86.10	141.60	120.48	397.97
YNL252C	MRPL17	0.96	1.50	1.72	2.09	2.20	2.29	10.97	3.26	45.36	22.63	56.33	25.89	298.92
YNL253W	TEX1	0.97	1.30	1.53	1.93	2.13	2.25	0.49	0.13	15.57	6.83	16.07	6.96	271.52
YNL254C	RTC4	0.96	1.31	1.56	1.97	2.16	2.29	0.15	0.01	4.14	-0.11	4.28	-0.10	264.35
YNL255C	GIS2	0.95	1.25	1.47	1.88	2.07	2.23	0.41	0.10	14.78	5.16	15.19	5.26	264.85
YNL257C	SIP3	1.08	1.49	1.74	2.12	2.27	2.35	7.18	0.25	51.50	15.54	58.68	15.79	312.00
YNL259C	ATX1	1.03	1.33	1.44	1.85	2.06	2.23	2.70	-0.41	28.41	1.84	31.12	1.43	299.16
YNL264C	PDR17	0.97	1.31	1.52	1.97	2.14	2.28	8.82	0.49	54.06	16.47	62.87	16.96	314.26
YNL265C	IST1	1.05	1.42	1.60	2.02	2.20	2.29	7.46	1.44	52.55	28.58	60.01	30.02	305.33
YNL266W	YNL266w	1.04	1.43	1.63	2.04	2.21	2.32	11.13	0.05	56.15	17.28	67.28	17.33	331.31
YNL268W	LYP1	0.98	1.30	1.47	1.89	2.09	2.25	3.04	-0.24	40.64	1.31	43.68	1.06	319.19
YNL268W	LYP1	0.97	1.23	1.49	1.93	2.10	2.22	1.93	4.25	28.35	37.73	30.28	41.98	304.42
YNL269W	BSC4	1.02	1.39	1.56	1.95	2.15	2.30	1.14	-0.07	5.32	1.19	6.47	1.11	260.78
YNL270C	ALP1	1.00	1.41	1.66	2.03	2.19	2.29	0.58	0.07	18.40	7.74	18.99	7.81	274.71
YNL271C	BNI1	1.01	1.36	1.56	1.96	2.17	2.30	0.41	0.16	13.63	10.87	14.04	11.04	238.62
YNL273W	TOF1	1.05	1.36	1.51	1.94	2.16	2.29	2.23	0.07	21.58	9.09	23.81	9.17	281.30
YNL274C	GOR1	0.93	1.38	1.55	1.96	2.13	2.24	4.95	3.17	28.80	4.60	33.74	7.78	289.45
YNL275W	BOR1	1.08	1.50	1.74	2.10	2.26	2.34	0.53	-0.05	17.93	4.35	18.17	4.29	269.28
YNL276C	YNL276c	1.03	1.41	1.59	2.01	2.17	2.26	1.99	0.07	32.06	3.25	34.05	3.33	282.00
YNL276C	YNL276c	0.88	1.25	1.40	1.75	1.93	2.00	7.09	1.90	46.30	16.43	53.39	18.33	299.05
YNL277W	MET2	0.87	1.22	1.38	1.78	2.00	2.16	1.15	0.81	0.13	0.25	1.27	1.06	249.17
YNL277W-A	YNL277w-a	0.94	1.22	1.37	1.83	2.03	2.18	1.37	3.55	19.61	27.18	20.98	30.73	258.58
YNL278W	CAF120	0.94	1.19	1.40	1.89	2.08	2.22	4.05	0.12	42.21	12.44	46.25	12.56	294.95
YNL279W	PRM1	0.94	1.42	1.62	1.96	2.11	2.22	12.98	7.28	54.35	41.08	67.33	48.37	322.21
YNL280C	ERG24	0.92	1.19	1.39	1.83	2.04	2.20	4.50	0.02	41.54	7.98	46.04	8.00	303.06
YNL280C	ERG24	0.99	1.30	1.43	1.73	1.87	1.95	38.95	27.47	88.19	58.64	127.14	86.11	368.74
YNL281W	HCH1	0.94	1.23	1.45	1.89	2.10	2.22	0.40	-0.01	19.48	9.44	19.88	9.44	279.81
YNL283C	WSC2	0.98	1.29	1.54	1.98	2.16	2.29	1.48	0.04	28.14	4.70	29.61	4.74	267.09
YNL284C	MRPL10	0.90	1.09	1.06	0.95	0.95	0.91	123.88	122.85	145.51	110.52	269.39	233.38	473.27
YNL285W	YNL285w	0.98	1.31	1.56	2.03	2.21	2.35	0.98	-0.27	22.80	1.35	23.78	1.09	277.75
YNL286W	CUS2	1.01	1.29	1.53	1.97	2.15	2.30	7.10	0.92	50.95	24.15	58.05	25.08	314.43
YNL288W	CAF40	1.02	1.39	1.65	2.03	2.18	2.31	8.90	0.32	56.38	15.65	65.28	15.97	330.06
YNL289W	PCL1	1.04	1.41	1.68	2.09	2.24	2.34	6.86	0.30	49.04	10.31	55.89	10.61	298.85
YNL291C	MID1	0.98	1.30	1.51	1.95	2.14	2.26	13.59	4.58	60.75	40.69	74.34	45.26	317.22
YNL292W	PUS4	0.93	1.27	1.39	1.81	2.01	2.18	3.13	0.78	33.57	6.54	36.70	7.32	274.33
YNL293W	MSB3	1.00	1.27	1.43	1.92	2.14	2.28	8.40	0.97	54.82	24.67	63.22	25.64	299.32
YNL294C	RIM21	0.95	1.23	1.45	1.90	2.09	2.24	5.08	0.15	46.56	8.74	51.64	8.90	295.12
YNL295W	YNL295w	0.97	1.26	1.50	1.98	2.16	2.29	0.06	-0.07	10.01	0.84	10.07	0.77	266.26
YNL296W	YNL296w	0.89	1.10	1.09	1.14	1.40	1.64	45.55	28.32	107.82	74.10	153.37	102.42	343.28
YNL297C	MON2	0.95	1.13	1.29	1.76	1.93	2.11	2.93	1.48	42.51	31.67	45.44	33.14	282.20
YNL298W	CLA4	0.96	1.11	1.21	1.65	1.88	2.12	7.70	0.57	54.30	19.19	62.00	19.77	280.94
YNL299W	TRF5	1.01	1.20	1.40	1.87	2.04	2.23	18.65	3.67	67.94	39.38	86.60	43.04	360.66
YNL300W	TOS6	0.92	1.32	1.50	1.89	2.06	2.17	10.23	6.83	46.79	36.77	57.01	43.60	308.97
YNL301C	RPL18b	0.98	1.24	1.45	1.89	2.07	2.27	2.04	0.30	36.37	16.78	38.41	17.07	297.78
YNL302C	RPS19b	0.99	1.12	1.20	1.59	1.90	2.19	18.06	1.23	71.87	29.40	89.92	30.63	319.53
YNL303W	YNL303w	1.01	1.32	1.57	1.97	2.13	2.31	1.53	0.05	30.18	3.00	31.70	3.05	282.68
YNL304W	YPT11	0.99	1.26	1.51	1.95	2.13	2.31	16.11	0.24	65.55	8.94	81.66	9.19	346.66
YNL305C	YNL305c	1.00	1.22	1.45	1.87	2.09	2.26	9.90	0.07	56.08	5.38	65.97	5.45	341.36
YNL307C	MCK1	0.90	1.26	1.39	1.81	2.05	2.23	1.19	0.71	1.02	0.35	2.21	1.06	252.60
YNL309W	STB1	1.01	1.31	1.56	1.99	2.16	2.32	2.68	0.36	36.47	13.34	39.15	13.70	287.30
YNL311C	SKP2	0.98	1.23	1.44	1.88	2.06	2.23	4.59	0.27	41.98	16.02	46.57	16.28	296.11
YNL314W	DAL82	0.99	1.22	1.43	1.87	2.05	2.24	5.42	0.55	45.45	15.73	50.86	16.27	298.35
YNL315C	ATP11	0.90	1.00	1.10	1.56	1.78	1.95	27.79	26.19	81.63	79.35	109.42	105.54	343.47
YNL315C	ATP11	0.86	1.08	1.11	1.11	1.38	1.64	46.03	28.61	97.65	82.70	143.68	111.31	361.29
YNL316C	PHA2	0.88	1.16	1.25	1.67	1.91	2.09	15.64	2.50	63.67	25.59	79.31	28.09	314.84
YNL318C	HXT14	1.04	1.27	1.46	1.90	2.08	2.28	1.46	0.18	30.43	4.06	31.89	4.24	289.94
YNL319W	YNL319w	1.03	1.44	1.68	2.05	2.21	2.38	0.30	0.09	8.35	0.32	8.65	0.40	252.44
YNL320W	YNL320w	1.08	1.38	1.59	1.96	2.11	2.28	25.36	3.59	80.17	40.34	105.53	43.92	355.26
YNL321W	VNX1	1.02	1.28	1.49	1.88	2.05	2.22	5.47	0.13	47.50	5.52	52.97	5.65	304.71
YNL322C	KRE1	0.99	1.12	1.24	1.49	1.63	1.84	4.98	0.16	44.70	4.81	49.68	4.96	322.65
YNL323W	LEM3	1.05	1.29	1.48	1.84	2.02	2.21	20.70	6.72	71.47	48.03	92.17	54.75	340.65
YNL324W	YNL324w	1.02	1.20	1.43	1.88	2.09	2.26	15.81	0.29	66.09	14.24	81.90	14.53	333.92
YNL325C	FIG4	1.10	1.44	1.71	2.14	2.31	2.45	1.60	1.35	30.69	3.00	32.29	4.34	304.36
YNL326C	PFA3	1.00	1.28	1.48	1.95	2.15	2.33	0.30	1.81	17.51	28.94	17.81	30.75	282.75
YNL327W	EGT2	0.98	1.23	1.42	1.88	2.07	2.26	4.50	0.46	42.97	14.05	47.46	14.52	302.74
YNL328C	MDJ2	0.98	1.25	1.47	1.90	2.08	2.26	5.43	0.64	44.21	19.01	49.64	19.65	300.99
YNL329C	PEX6	0.96	1.20	1.41	1.86	2.05	2.22	11.88	1.37	57.13	26.11	69.00	27.49	304.78
YNL330C	RPD3	0.96	1.15	1.35	1.79	1.97	2.17	13.07	0.42	60.53	14.31	73.60	14.73	326.70
YNL332W	THI12	1.01	1.32	1.57	1.99	2.14	2.29	10.11	1.05	59.80	23.62	69.92	24.67	315.86

ORF.name	Strain	Optical density at 600 nm at regular intervals (h)						GLUCOSE		FRUCTOSE		TOTAL SUGARS (g/l)		TOTAL AMINO ACIDS (mg/L)
		0	26	33	48	59	78	102 h	118 h	102 h	118 h	102 h	118 h	102 h
YNL333W	SNZ2	1.06	1.35	1.59	2.02	2.17	2.33	10.48	0.77	57.34	21.61	67.82	22.38	317.17
YNL334C	SNO2	0.98	1.16	1.37	1.80	2.00	2.23	3.61	0.55	37.13	6.95	40.74	7.50	299.03
YNL335W	DDI3	1.05	1.35	1.55	1.96	2.12	2.30	6.44	0.59	49.49	18.14	55.93	18.73	305.99
YNL336W	COS1	1.01	1.32	1.59	1.96	2.11	2.29	16.99	0.69	65.05	18.02	82.05	18.72	337.29
YNL338W	YNL338w	1.01	1.32	1.58	1.96	2.11	2.30	9.82	0.32	54.74	12.96	64.56	13.27	317.55
YNL339C	YRF1-6	0.99	1.28	1.57	1.97	2.14	2.30	9.77	0.22	56.00	8.21	65.78	8.44	317.70
YNR001C	CIT1	0.94	1.30	1.48	1.86	2.06	2.19	8.87	1.57	54.70	24.09	63.58	25.66	333.77
YNR002C	ATO2	0.93	1.29	1.49	1.89	2.05	2.17	26.06	11.65	84.34	59.30	110.40	70.95	349.75
YNR004W	SWM2	0.91	1.20	1.31	1.72	1.98	2.16	20.14	10.25	75.24	61.35	95.38	71.60	338.56
YNR005C	YNR005c	0.93	1.28	1.46	1.72	1.86	1.99	21.10	9.03	93.09	70.86	114.19	79.88	359.50
YNR006W	VPS27	0.97	1.28	1.42	1.65	1.77	1.90	24.56	7.49	91.42	64.89	115.98	72.38	377.33
YNR007C	ATG3	0.91	1.25	1.43	1.77	1.95	2.07	39.09	19.73	98.67	69.98	137.76	89.71	360.03
YNR008W	LRO1	0.90	1.23	1.42	1.79	1.98	2.11	14.45	4.13	67.20	39.51	81.65	43.64	308.50
YNR009W	NRM1	0.91	1.23	1.38	1.75	1.93	2.07	21.73	18.60	77.60	76.26	99.32	94.86	321.50
YNR010W	CSE2	0.91	1.10	1.14	1.20	1.47	1.74	61.84	40.35	119.14	98.04	180.99	138.39	330.22
YNR010W	CSE2	0.86	1.20	1.37	1.82	2.00	2.16	3.71	1.47	32.54	14.08	36.25	15.55	265.81
YNR012W	URK1	0.90	1.21	1.39	1.75	1.95	2.11	14.37	7.09	65.64	46.69	80.01	53.78	323.58
YNR013C	PHO91	0.97	1.25	1.43	1.87	2.07	2.21	10.47	7.22	63.83	53.70	74.30	60.92	324.62
YNR014W	YNR014w	0.96	1.33	1.50	1.83	2.02	2.17	9.18	2.66	54.43	31.03	63.62	33.71	302.24
YNR015W	SMM1	0.90	1.23	1.39	1.77	1.95	2.09	19.47	7.46	72.83	52.60	92.30	60.06	349.70
YNR018W	AIM38	0.88	1.20	1.40	1.76	1.94	2.07	14.23	4.60	62.66	40.02	76.89	44.62	342.42
YNR019W	ARE2	0.92	1.30	1.49	1.84	2.04	2.17	17.17	9.49	73.58	58.93	90.74	68.42	342.52
YNR020C	ATP23	0.96	1.37	1.57	1.88	2.04	2.17	9.53	5.75	59.36	44.12	68.88	49.87	315.27
YNR021W	YNR021w	0.96	1.28	1.45	1.72	1.89	2.05	26.78	13.68	86.05	65.27	112.82	78.95	337.34
YNR022C	MRPL50	0.91	1.25	1.46	1.81	1.99	2.11	17.44	7.86	71.53	52.43	88.97	60.29	351.23
YNR024W	MPP6	0.94	1.26	1.42	1.76	1.94	2.09	10.46	5.24	60.43	42.84	70.89	48.07	302.94
YNR025C	YNR025c	0.87	1.11	1.22	1.58	1.83	2.00	17.26	10.28	73.66	63.03	90.92	73.31	304.92
YNR027W	BUD17	0.92	1.25	1.42	1.76	1.96	2.10	15.96	9.31	69.80	54.14	85.76	63.45	307.52
YNR028W	CPR8	0.92	1.24	1.41	1.78	1.97	2.10	16.78	7.27	66.12	51.34	82.90	58.61	313.16
YNR029C	YNR029c	0.95	1.21	1.32	1.71	1.94	2.12	7.99	3.53	56.21	38.59	64.20	42.13	313.30
YNR030W	ALG12	0.99	1.30	1.39	1.70	1.89	2.06	16.57	6.69	67.34	45.11	83.91	51.80	297.53
YNR031C	SSK2	0.91	1.24	1.34	1.70	1.89	2.06	18.10	6.58	75.30	48.26	93.40	54.84	329.14
YNR032C-A	HUB1	0.91	1.32	1.53	1.87	2.02	2.15	9.11	4.76	39.28	22.97	48.39	27.73	292.77
YNR032W	PPG1	0.93	1.27	1.39	1.72	1.92	2.08	29.71	16.41	93.06	80.32	122.77	96.73	358.51
YNR033W	ABZ1	0.98	1.22	1.41	1.86	2.05	2.23	1.38	0.99	22.41	13.88	23.79	14.86	271.32
YNR034W	SOL1	0.92	1.22	1.39	1.73	1.92	2.07	22.71	10.76	77.36	55.18	100.06	65.95	339.28
YNR036C	MRPS12	0.90	1.28	1.45	1.79	2.00	2.18	1.36	1.04	12.21	3.02	13.58	4.06	272.47
YNR037C	RSM19	0.87	1.13	1.18	1.44	1.76	2.01	4.68	3.62	46.51	34.39	51.18	38.01	183.59
YNR039C	ZRG17	0.98	1.39	1.58	1.93	2.10	2.22	10.47	3.16	58.71	32.99	69.18	36.15	282.94
YNR040W	YNR040w	0.95	1.30	1.53	1.91	2.10	2.23	9.43	2.07	62.29	28.14	71.72	30.21	259.04
YNR041C	COQ2	0.92	1.34	1.51	1.86	2.03	2.16	4.16	3.51	44.81	40.65	48.97	44.16	262.62
YNR042W	YNR042w	0.88	1.17	1.34	1.75	1.96	2.10	24.90	9.68	76.23	50.22	101.13	59.90	264.83
YNR045W	PET494	0.90	1.28	1.45	1.77	1.97	2.12	6.06	2.23	45.75	24.05	51.81	26.29	314.45
YNR047W	FPK1	0.98	1.26	1.42	1.72	1.91	2.09	16.90	8.84	70.84	61.11	87.74	69.94	266.12
YNR048W	YNR048w	0.98	1.39	1.57	1.94	2.12	2.23	26.81	17.82	79.05	72.90	105.87	90.73	247.69
YNR049C	MSO1	0.89	1.25	1.40	1.76	1.95	2.10	22.33	17.02	80.87	65.80	103.20	82.82	191.72
YNR050C	LYS9	0.91	1.27	1.37	1.63	1.82	2.00	1.37	1.29	8.07	1.45	9.44	2.74	303.86
YNR051C	BRE5	0.93	1.33	1.51	1.91	2.09	2.22	12.47	4.91	49.22	27.18	61.69	32.10	332.92
YNR052C	POP2	0.91	1.12	1.16	1.34	1.57	1.76	63.11	52.22	108.34	76.06	171.46	128.28	391.54
YNR052C	POP2	0.87	1.11	1.15	1.32	1.56	1.68	42.09	34.89	101.02	93.50	143.11	128.31	347.86
YNR055C	HOL1	0.91	1.06	1.26	1.75	1.94	2.10	3.19	1.18	36.35	17.39	39.54	18.57	305.59
YNR056C	BIO5	0.99	1.41	1.61	1.97	2.12	2.24	23.49	9.89	61.25	43.85	84.74	53.74	364.17
YNR057C	BIO4	1.01	1.33	1.49	1.89	2.07	2.20	11.66	4.45	47.52	27.99	59.18	32.44	320.21
YNR058W	BIO3	0.99	1.42	1.62	1.98	2.18	2.31	1.78	1.34	21.96	2.74	23.74	4.08	258.70
YNR059W	MNT4	0.94	1.30	1.47	1.83	2.03	2.18	8.25	5.10	41.15	30.59	49.40	35.69	309.26
YNR060W	FRE4	0.90	1.25	1.42	1.80	2.00	2.18	7.65	4.04	37.35	19.77	45.00	23.80	304.43
YNR061C	YNR061c	0.91	1.30	1.49	1.83	2.00	2.12	17.80	8.11	57.19	39.71	74.99	47.82	346.49
YNR062C	YNR062c	0.92	1.29	1.45	1.83	2.01	2.14	16.07	7.12	56.31	33.50	72.38	40.62	336.93
YNR063W	YNR063w	0.97	1.38	1.57	1.94	2.10	2.20	13.71	9.18	53.70	42.51	67.40	51.69	326.45
YNR064C	YNR064c	0.90	1.23	1.38	1.69	1.87	2.00	12.03	7.19	49.94	37.26	61.97	44.46	310.14
YNR065C	YSN1	0.97	1.42	1.63	2.03	2.19	2.29	14.24	6.07	49.99	32.62	64.23	38.69	331.60
YNR066C	YNR066c	0.96	1.42	1.60	1.90	2.06	2.19	16.51	9.78	53.18	42.07	69.69	51.84	333.18
YNR067C	DSE4	0.95	1.28	1.43	1.75	1.95	2.12	18.24	8.70	60.04	38.95	78.29	47.65	322.80
YNR068C	YNR068c	1.00	1.41	1.60	1.94	2.10	2.21	11.42	6.19	47.20	32.29	58.62	38.48	323.35
YNR069C	BSC5	0.84	0.97	1.13	1.52	1.73	1.91	3.04	1.18	34.67	17.04	37.71	18.22	243.28
YNR070W	PDR18	0.94	1.38	1.55	1.96	2.14	2.26	10.21	6.92	54.88	43.39	65.10	50.31	318.13
YNR071C	YNR071c	0.92	1.39	1.58	1.99	2.12	2.23	8.96	4.79	47.42	30.44	56.37	35.23	309.92
YNR072W	HXT17	0.96	1.42	1.61	2.04	2.17	2.27	13.56	5.64	51.88	33.18	65.44	38.82	340.95
YNR073C	YNR073c	0.98	1.38	1.54	2.00	2.15	2.27	16.97	9.67	61.66	49.23	78.63	58.90	335.06
YNR074C	AIF1	1.05	1.52	1.76	2.10	2.22	2.30	10.21	15.88	48.55	58.49	58.76	74.37	311.88
YNR075W	COS10	1.01	1.61	1.86	2.16	2.27	2.33	6.21	7.58	39.57	40.21	45.78	47.79	278.77
YOL001W	PHO80	1.04	1.15	1.24	1.86	2.14	2.33	21.34	14.49	83.76	68.72	105.10	83.21	362.69
YOL002C	IZH2	1.03	1.41	1.67	2.07	2.22	2.36	1.07	0.96	27.68	24.38	28.75	25.34	295.29
YOL003C	PFA4	0.99	1.36	1.66	2.12	2.25	2.39	0.09	0.39	5.11	13.76	5.20	14.15	298.88
YOL004W	SIN3	1.01	1.25	1.43	1.79	1.96	2.13	34.46	28.29	91.35	85.94	125.81	114.23	333.02
YOL006C	TOP1	1.08	1.24	1.30	1.75	2.00	2.19	57.33	45.66	108.00	92.87	165.33	138.54	395.37
YOL007C	CSI2	1.07	1.46	1.69	2.08	2.22	2.35	18.22	8.22	67.62	50.13	85.84	58.35	347.29
YOL008W	COQ10	1.10	1.56	1.82	2.18	2.29	2.40	3.51	0.46	39.33	16.43	42.84	16.88	284.91
YOL009C	MDM12	1.08	1.41	1.60	2.02	2.19	2.33	8.83	0.67	54.65	21.35	63.48	22.02	322.77
YOL011W	PLB3	1.08	1.39	1.62	2.04	2.19	2.34	6.21	0.69	44.05	23.00	50.26	23.69	301.40
YOL012C	HTZ1	1.04	1.19	1.29	1.72	1.93	2.10	38.74	20.65	88.92	70.57	127.65	91.23	370.43
YOL013C	HRD1	1.05	1.35	1.61	2.08	2.23	2.37	5.89	0.22	47.29	14.57	53.18	14.80	304.60
YOL013W-A	YOL013w-a	0.98	1.44	1.63	1.98	2.14	2.22	2.97	13.89	48.88	54.70	51.78	70.60	308.47
YOL013W-B	YOL013w-b	0.94	1.26	1.41	1.84	2.04	2.15	2.44	7.18	32.85	39.61	35.29	46.79	262.72
YOL013W-B	YOL013w-b	0.89	1.19	1.33	1.67	1.87	2.02	6.52	3.88	46.16	29.39	52.68	33.28	287.42
YOL014W	YOL014w	1.06	1.43	1.65	2.04	2.19	2.33	3.37	0.53	40.49	21.00	43.86	21.54	295.79
YOL015W	IRC10	1.00	1.36	1.58	1.98	2.14	2.31	1.59	0.17	7.07	10.48	8.66	10.65	273.25
YOL016C	CMK2	0.97	1.49	1.70	2.03	2.03	2.23	5.08	3.10	31.11	10.42	36.19	13.52	309.80
YOL017W	ESC8	1.01	1.28	1.50	1.93	2.09	2.26	2.80	4.10	37.25	37.40	40.05	41.50	299.25
YOL018C	TLG2	1.08	1.31	1.53	1.99	2.13	2.27	15.18	12.41	65.49	58.97	80.68	71.38	331.69
YOL019W	YOL019w	1.08	1.39	1.61	2.06	2.21	2.36	4.32	0.01	40.47	0.82	44.79	0.83	311.72
YOL019W-A	YOL019w-a	0.94	1.27	1.37	1.76	2.00	2.14	1.23	1.17	15.13	15.53	16.35	16.70	260.67
YOL020W	TAT2	1.08	1.42	1.66	2.12	2.25	2.39	11.00	0.12	60.23	15.54	71.23	15.67	322.85
YOL023W	IFM1	1.00	1.30	1.52	1.97	2.10	2.23	7.39	0.19	46.12	14.56	53.51	14.75	275.86
YOL024W	YOL024w	0.93	1.18	1.36	1.81	1.94	2.12	17.43	0.42	70.57	20.09	88.01	20.51	335.96
YOL025W	LAG2	1.02	1.32	1.51	1.95	2.10	2.26	8.43	0.10	55.15	15.45	63.58	15.56	306.57
YOL027C	MDM38	0.79	1.07	1.29	1.78	1.92	2.10	3.12	-0.19	36.12	3.00	39.24	2.81	298.16
YOL028C	YAP7	0.97	1.25	1.42	1.86	2.01	2.19	16.03	-0.16	66.88	3.28	82.91	3.12	327.00
YOL029C	YOL029c	0.95	1.21	1.40	1.87	2.01	2.17	19.58	-0.03	64.92	10.34	84.50	10.31	345.13
YOL030W	GAS5	0.92	1.08	1.17	1.69	1.86	2.06	32.08	2.94	83.56	43.42	115.64	46.36	355.43
YOL031C	SIL1	0.96	1.23	1.43	1.92	2.07	2.24	15.43	4.15	62.41	42.13	77.83	46.28	331.83
YOL032W	OPI10	0.89	1.17	1.40	1.91	2.04	2.21	5.99	-0.45	44.79	10.68	50.78	10.23	297.43
YOL033W	MSE1	0.96	1.14	1.12	1.00	1.00	0.98	122.15	125.32	128.74	132.56	250.90	257.89	527.58
YOL035C	YOL035c	0.97	1.21	1.42	1.91	2.07	2.23	13.12	0.39	61.78	15.47	74.90	15.86	338.92
YOL036W	YOL036w	1.02	1.31	1.51	1.97	2.15	2.31	1.65	-0.04	28.02	0.50	29.67	0.46	297.51
YOL037C	YOL037c	0.96	1.21	1.40	1.87	2.03	2.20	15.30	0.28	63.52	12.14	78.81	12.42	334.22
YOL038C-A	YOL038c-a	0.86	1.19	1.29	1.72	1.95	2.06	3.18	2.95	38.98	28.35	42.16	31.30	274.52
YOL039W	RPP2a	1.00	1.31	1.51	1.95	2.10	2.27	3.43	0.02	38.31	1.55	41.74	1.57	308.16
YOL041C	NOP12	0.82	1.02	1.18	1.77	1.95	2.14	5.01	0.24	42.62	2.40	47.63	2.65	300.52
YOL042W	NGL1	0.96	1.31	1.54	2.00	2.13	2.28	3.59	0.08	37.92	-0.34	41.50	-0.26	320.70
YOL043C	NTG2	0.96	1.26	1.47	1.93	2.07	2.24	9.60	0.13	52.73	1.98	62.34	2.11	325.36
YOL044W	PEX15	0.99	1.31	1.55	2.02	2.15	2.30	21.78	0.10	73.16	7.77	94.94	7.87	335.24
YOL045W	PSK2	0.98	1.30	1.52	1.97	2.10	2.25	20.26	0.20	71.90	7.66	92.16	7.87	343.58
YOL046C	YOL046c	0.92	1.15	1.34	1.85	1.99	2.16	14.82	0.15	64.03	8.41	78.86	8.56	335.00
YOL047C	YOL047c	0.93	1.18	1.41	1.94	2.10	2.29	0.81	-0.32	21.11	3.86	21.92	3.54	275.61
YOL048C	RRT8	1.00	1.25	1.48	1.94	2.10	2.25	15.72	0.57	66.88	18.57	82.60	19.14	335.51
YOL048C	RRT8	0.88	1.19	1.35	1.71	1.89	2.03	6.16	1.12	48.59	12.14	54.75	13.26	295.18
YOL049W	GSH2	0.88	1.19	1.35	1.71	1.94	2.04	1.47	1.14	11.61	4.45	13.08	5.59	264.49
YOL049W	GSH2	0.97	1.24	1.44	1.87	2.01	2.18	13.23	0.32	61.11	10.66	74.34	10.98	338.72
YOL050C	YOL050c	0.99	1.16	1.29	1.84	2.06	2.27	14.11	0.16	65.23	11.70	79.35	11.86	315.75
YOL051W	GAL11	0.99	1.31	1.54	2.02	2.18	2.31	9.12	1.65	56.76	11.76	65.89	13.40	290.96
YOL052C	SPE2	0.94	1.20	1.37	1.82	1.97	2.17	11.55	0.06	57.20	4.21	68.75	4.27	329.82
YOL052C-A	DDR2	0.94	1.13	1.29	1.73	2.00	2.14	7.27	4.41	53.82	30.80	61.09	35.21	284.38
YOL053C-A	YOL053C-A	0.82	1.13	1.37	1.85	2.00	2.19	5.66	0.10	42.88	0.46	48.53	0.55	326.19
YOL053W	AIM39	1.00	1.37	1.60	2.01	2.16	2.33	3.32	0.13	38.12	0.09	41.43	0.22	326.81
YOL054W	PSH1	0.96	1.22	1.41	1.90	2.06	2.21	26.96	0.04	88.00	8.03	114.97	8.07	348.23
YOL055C	THI20	0.98	1.32	1.55	2.03	2.16	2.30	13.95	0.10	62.31	4.61	76.26	4.70	333.65
YOL056W	GPM3	0.99	1.30	1.53	2.01	2.15	2.30	21.78	0.02	72.78	7.82	94.56	7.84	354.41
YOL057W	YOL057w	0.97	1.31	1.51	1.98	2.14	2.33	0.26	0.14	9.19	-0.62	9.44	-0.48	281.88
YOL058W	ARG1	0.89	1.16	1.32	1.75	1.95	2.08	1.27	1.30	7.79	4.21	9.06	5.51	226.68
YOL059W	GPD2	1.01	1.32	1.57	2.01	2.15	2.30	14.28	0.50	66.24	22.02	80.52	22.53	327.85
YOL060C	MAM3	0.99	1.23	1.45	1.95	2.11	2.28	16.64	1.71	65.54	31.13	82.18	32.85	333.25
YOL061W	PRS5	0.99	1.17	1.29	1.83	2.04	2.22	21.63	2.94	74.71	43.35	96.34	46.28	357.10
YOL062C	APM4	0.99	1.36	1.64	2.09	2.23	2.36	8.16	0.16	54.18	5.89	62.34	6.04	299.88

ORF.name	Strain	Optical density at 600 nm at regular intervals (h)						GLUCOSE		FRUCTOSE		TOTAL SUGARS (g/l)		TOTAL AMINO ACIDS (mg/L)
		0	26	33	48	59	78	102 h	118 h	102 h	118 h	102 h	118 h	102 h
YOL063C	CRT10	0.96	1.36	1.62	2.00	2.13	2.36	13.97	0.16	60.49	10.20	74.46	10.37	340.37
YOL064C	MET22	0.80	0.98	1.14	1.71	1.88	2.04	23.72	4.99	74.50	33.83	98.22	38.82	321.92
YOL065C	INP54	0.95	1.20	1.40	1.88	2.03	2.18	15.83	0.16	64.90	4.87	80.73	5.03	331.88
YOL067C	RTG1	0.94	1.18	1.37	1.94	2.11	2.26	17.99	0.21	72.61	8.97	90.60	9.19	348.46
YOL067C	RTG1	0.98	1.23	1.41	1.82	2.07	2.23	4.55	1.55	39.04	14.96	43.59	16.51	287.97
YOL068C	HST1	0.96	1.33	1.57	1.98	2.11	2.25	17.06	-0.22	67.85	8.41	84.91	8.19	331.85
YOL070C	NBA1	0.98	1.30	1.53	1.99	2.14	2.27	13.85	0.18	62.44	5.95	76.29	6.13	324.92
YOL071W	EMI5	0.93	1.18	1.39	1.92	2.06	2.21	16.22	0.29	68.54	7.82	84.75	8.11	332.40
YOL072W	THP1	0.96	1.08	1.05	1.13	1.24	1.58	108.28	95.81	130.41	127.91	238.69	223.72	468.20
YOL073C	YOL073c	0.90	1.22	1.41	1.76	1.94	2.07	3.24	0.99	34.59	9.60	37.83	10.59	277.05
YOL075C	YOL075c	1.01	1.31	1.55	1.99	2.14	2.29	19.19	0.16	65.30	11.00	84.48	11.15	347.61
YOL076W	MDM20	1.00	1.15	1.22	1.69	1.98	2.26	20.03	2.22	74.03	36.82	94.05	39.04	258.78
YOL077W-A	ATP19	0.89	1.09	1.21	1.63	1.90	2.09	5.63	3.29	48.84	28.43	54.47	31.72	295.27
YOL079W	YOL079w	0.96	1.22	1.43	1.87	2.02	2.18	10.76	0.32	58.45	13.32	69.22	13.65	321.45
YOL080C	REX4	0.98	1.19	1.39	1.94	2.10	2.28	14.50	0.33	66.42	16.53	80.92	16.87	323.77
YOL081W	IRA2	0.98	1.29	1.46	1.87	2.03	2.31	-0.02	0.02	8.33	-0.67	8.31	-0.65	341.87
YOL082W	ATG19	0.83	1.16	1.40	1.87	2.02	2.18	4.84	-0.11	45.58	0.97	50.42	0.86	312.87
YOL083W	YOL083w	0.93	1.21	1.46	2.06	2.04	2.15	12.53	0.15	67.27	5.92	79.81	6.06	336.71
YOL084W	PHM7	0.91	1.18	1.40	1.88	2.02	2.18	15.17	0.02	64.87	4.68	80.04	4.70	335.19
YOL085C	YOL085c	0.94	1.24	1.47	1.94	2.07	2.21	15.84	0.12	62.45	5.58	78.29	5.70	335.02
YOL086C	ADH1	0.92	1.18	1.15	1.02	1.01	0.97	124.37	132.15	140.34	143.68	264.71	275.83	525.56
YOL086C	ADH1	0.86	1.02	1.02	0.92	1.02	1.23	107.56	104.63	134.67	126.48	242.24	231.11	497.87
YOL086C	ADH1	0.87	1.10	1.07	0.97	1.10	1.27	110.13	101.83	123.77	115.61	233.90	217.44	499.47
YOL086W-A	YOL086w-a	0.93	1.15	1.31	1.67	1.92	2.11	3.57	1.28	40.42	15.60	43.99	16.88	280.33
YOL087C	YOL087c	0.98	1.51	1.75	2.15	2.27	2.35	15.07	4.21	53.52	15.21	68.60	19.42	314.26
YOL088C	MPD2	0.88	1.30	1.47	1.87	2.01	2.04	10.86	7.46	50.83	40.28	61.69	47.73	319.89
YOL089C	HAL9	0.93	1.40	1.57	1.96	2.11	2.20	14.93	7.58	57.32	42.81	72.24	50.39	342.43
YOL090W	MSH2	0.91	1.45	1.62	1.96	2.09	2.18	18.15	8.43	60.72	45.23	78.87	53.66	346.23
YOL091W	SPO21	0.94	1.49	1.67	2.04	2.15	2.25	17.90	10.15	64.08	49.37	81.98	59.52	346.52
YOL092W	YOL092w	0.97	1.50	1.69	2.06	2.17	2.26	17.64	7.02	58.96	37.27	76.60	44.29	347.30
YOL093W	TRM10	1.00	1.47	1.63	2.04	2.18	2.28	14.96	8.70	58.38	47.86	73.33	56.56	334.63
YOL095C	HMI1	0.95	1.37	1.52	1.93	2.11	2.24	6.44	2.98	38.47	10.91	44.92	13.89	297.73
YOL096C	COQ3	0.82	1.00	0.97	1.15	1.52	1.79	51.96	36.49	88.70	84.96	140.66	121.45	360.92
YOL097W-A	YOL097w-a	0.92	1.18	1.31	1.73	1.97	2.11	10.90	4.02	60.45	30.86	71.34	34.88	298.64
YOL098C	YOL098c	0.94	1.44	1.60	2.02	2.18	2.28	3.80	2.97	21.87	6.00	25.67	8.98	265.22
YOL099C	YOL099c	0.88	1.29	1.41	1.81	1.99	2.13	8.87	3.02	42.88	13.90	51.75	16.92	316.31
YOL100W	PKH2	0.86	1.09	1.08	1.27	1.51	1.72	12.21	9.61	53.56	46.62	65.77	56.23	257.54
YOL101C	IZH4	0.92	1.46	1.64	2.04	2.20	2.31	3.35	2.97	14.65	2.23	18.00	5.20	299.00
YOL103W	ITR2	0.89	1.32	1.48	1.88	2.04	2.14	12.10	7.26	49.85	35.92	61.95	43.18	324.40
YOL104C	NDJ1	0.94	1.46	1.72	2.07	2.20	2.30	8.67	3.43	40.97	18.21	49.64	21.65	306.03
YOL105C	WSC3	0.88	1.27	1.42	1.83	2.01	2.11	15.01	5.24	51.19	31.54	66.20	36.78	339.36
YOL106W	YOL106w	0.89	1.36	1.55	1.96	2.13	2.21	14.21	9.97	52.46	44.81	66.67	54.77	331.03
YOL107W	YOL107w	0.89	1.28	1.51	1.92	2.09	2.21	12.54	3.03	49.70	15.39	62.24	18.42	332.03
YOL108C	INO4	0.90	1.11	1.12	1.23	1.72	1.64	28.54	14.68	69.73	56.18	98.27	70.86	259.19
YOL108C	INO4	0.87	1.14	1.16	1.32	1.60	1.80	27.77	15.88	87.95	70.98	115.73	86.86	241.64
YOL109W	ZEO1	0.93	1.36	1.52	1.91	2.09	2.22	12.64	3.91	48.79	24.14	61.43	28.06	331.15
YOL110W	SHR5	0.96	1.41	1.56	1.98	2.17	2.30	3.69	3.01	16.91	4.07	22.60	7.08	298.43
YOL111C	MDY2	0.90	1.35	1.51	1.94	2.10	2.19	11.08	4.21	42.95	22.79	54.03	27.00	322.04
YOL112W	MSB4	0.91	1.48	1.63	2.00	2.15	2.25	6.67	3.29	36.42	13.19	43.09	16.48	314.81
YOL113W	SKM1	0.92	1.38	1.53	1.95	2.13	2.25	12.98	5.86	51.05	33.19	64.00	39.04	325.95
YOL114C	YOL114c	0.97	1.50	1.73	2.16	2.28	2.35	5.06	3.20	29.15	10.55	34.22	13.74	286.55
YOL115W	PAP2	0.92	1.37	1.56	1.95	2.12	2.23	15.39	4.21	54.32	26.36	69.70	30.57	339.69
YOL116W	MSN1	0.87	1.28	1.48	1.88	2.07	2.20	4.00	3.15	22.14	9.68	26.14	12.83	284.33
YOL117W	RRI2	0.88	1.32	1.56	1.96	2.13	2.24	6.61	3.05	38.03	6.76	44.64	9.81	316.86
YOL118C	YOL118c	0.88	1.28	1.46	1.89	2.08	2.21	5.01	3.16	30.15	8.06	35.16	11.22	303.10
YOL119C	MCH4	0.89	1.31	1.56	1.97	2.13	2.24	3.34	3.17	17.60	8.26	20.93	11.43	291.20
YOL121C	RPS19a	0.92	1.20	1.33	1.82	2.06	2.21	9.86	3.43	46.42	18.62	56.28	22.05	311.33
YOL122C	SMF1	0.86	1.21	1.30	1.66	1.86	2.02	9.57	3.67	46.00	21.14	55.57	24.81	312.98
YOL124C	TRM11	0.92	1.33	1.43	1.78	1.95	2.10	14.86	5.14	52.26	31.67	67.12	36.82	314.52
YOL125W	TRM13	0.97	1.15	1.36	1.84	2.03	2.19	25.44	11.30	75.85	56.01	101.29	67.31	342.12
YOL126C	MDH2	0.99	1.54	1.69	2.09	2.21	2.30	14.87	6.02	54.67	34.66	69.54	40.68	339.89
YOL128C	YGK3	0.95	1.50	1.69	2.08	2.20	2.30	9.24	3.23	43.70	13.11	52.93	16.33	332.37
YOL129W	VPS68	0.87	1.22	1.30	1.68	1.83	1.94	10.66	4.72	47.57	31.76	58.22	36.49	344.11
YOL131W	YOL131w	0.96	1.51	1.66	2.04	2.20	2.32	3.12	3.20	9.40	3.23	12.52	6.43	263.98
YOL132W	GAS4	0.90	1.37	1.54	1.93	2.07	2.18	9.94	3.54	45.13	16.88	55.07	20.42	315.65
YOL136C	PFK27	0.87	1.27	1.43	1.78	1.95	2.10	8.73	3.07	42.02	12.26	50.74	15.33	304.51
YOL137W	BSC6	0.85	1.20	1.35	1.72	1.90	2.03	12.67	4.14	49.37	26.57	62.04	30.71	331.30
YOL138C	RTC1	0.85	1.23	1.40	1.78	1.95	2.08	18.10	4.96	60.07	32.52	78.17	37.48	342.36
YOL140W	ARG8	0.90	1.21	1.37	1.72	1.89	2.06	8.25	1.15	53.33	14.14	61.58	15.29	300.50
YOL141W	PPM2	0.89	1.31	1.47	1.91	2.07	2.17	10.50	4.34	48.49	25.11	58.98	29.46	317.01
YOL145C	CTR9	0.93	1.14	1.18	1.43	1.69	1.93	41.98	26.70	100.90	68.63	142.88	95.33	326.93
YOL147C	PEX11	0.92	1.14	1.36	1.76	1.98	2.14	4.94	5.00	41.20	40.69	46.14	45.69	260.47
YOL148C	SPT20	0.87	1.08	1.05	0.98	1.10	1.21	63.16	46.33	108.78	93.52	171.95	139.85	409.79
YOL150C	YOL150c	0.93	1.33	1.47	1.90	2.09	2.20	7.17	3.16	40.52	14.97	47.69	18.13	306.41
YOL151W	GRE2	0.97	1.36	1.54	1.96	2.10	2.23	7.76	4.24	43.28	24.75	51.04	28.98	317.03
YOL151W	GRE2	0.99	1.22	1.41	1.84	2.05	2.14	17.79	16.48	67.29	66.96	85.07	83.44	335.98
YOL152W	FRE7	0.88	1.05	1.00	1.25	1.51	1.76	35.29	33.75	82.43	82.74	117.72	116.49	343.01
YOL152W	FRE7	0.95	1.17	1.39	1.85	2.06	2.17	9.11	4.95	55.83	44.95	64.94	49.90	311.31
YOL153C	YOL153c	1.00	1.40	1.65	2.14	2.30	2.39	-0.02	0.02	1.57	-0.20	1.55	-0.17	262.67
YOL154W	ZPS1	1.00	1.33	1.54	1.97	2.12	2.23	6.31	1.12	47.34	11.45	53.65	12.57	296.54
YOL155C	HPF1	0.94	1.16	1.36	1.82	2.00	2.14	11.63	4.28	60.16	40.21	71.79	44.50	323.47
YOL158C	ENB1	1.06	1.58	1.72	2.06	2.19	2.28	8.70	4.37	43.42	25.88	52.11	30.26	309.99
YOL159C	YOL159c	1.01	1.50	1.64	2.00	2.16	2.25	6.91	3.63	41.85	20.49	48.76	24.11	300.02
YOL159C-A	YOL159c-a	0.91	1.16	1.27	1.71	1.95	2.11	8.05	4.91	55.98	33.41	64.03	38.33	278.26
YOL160W	YOL160w	0.98	1.47	1.66	2.04	2.16	2.24	11.65	3.79	50.89	21.08	62.54	24.87	314.52
YOL162W	YOL162w	0.98	1.41	1.57	1.94	2.09	2.19	9.62	3.03	51.94	9.02	61.56	12.05	321.64
YOL163W	YOL163w	1.02	1.50	1.71	2.08	2.21	2.28	12.54	3.08	54.52	8.96	67.06	12.04	324.33
YOL164W	BDS1	0.89	1.20	1.38	1.77	1.95	2.08	6.49	1.09	48.63	12.21	55.12	13.30	293.74
YOL164W-A	YOL164w-a	0.90	1.20	1.35	1.74	1.96	2.12	1.77	2.12	24.75	22.54	26.52	24.66	255.20
YOR001W	RRP6	0.95	1.26	1.47	1.95	2.13	2.28	17.54	2.83	69.63	26.31	87.17	29.14	355.48
YOR002W	ALG6	0.97	1.23	1.40	1.72	1.89	2.06	4.95	0.38	44.32	15.62	49.27	16.00	300.59
YOR003W	YSP3	0.94	1.24	1.45	1.88	2.06	2.25	5.51	6.11	49.63	39.51	55.14	45.62	308.14
YOR005C	DNL4	0.92	1.14	1.29	1.75	1.97	2.20	0.80	0.01	20.11	5.87	20.90	5.88	304.11
YOR006C	TSR3	1.01	1.23	1.28	1.73	2.01	2.24	1.84	0.04	22.71	8.23	24.55	8.27	286.26
YOR007C	SGT2	0.95	1.23	1.43	1.88	2.06	2.23	6.55	0.87	47.04	20.96	53.60	21.83	307.14
YOR008C	SLG1	0.90	1.25	1.45	1.85	2.02	2.14	2.93	1.56	25.38	13.55	28.31	15.11	242.99
YOR008C-A	YOR008c-a	0.94	1.14	1.28	1.73	1.94	2.04	1.47	0.95	18.36	1.73	19.83	2.68	298.61
YOR009W	TIR4	1.00	1.35	1.61	1.98	2.14	2.29	1.79	0.21	16.29	8.56	18.08	8.77	276.50
YOR010C	TIR2	1.00	1.40	1.67	2.01	2.16	2.28	0.44	0.12	16.99	8.35	17.43	8.47	279.69
YOR011W	AUS1	0.97	1.34	1.57	1.98	2.16	2.30	0.10	1.31	1.89	1.38	1.98	2.70	251.62
YOR012W	YOR012w	0.99	1.29	1.50	1.92	2.12	2.29	0.29	0.09	10.80	3.03	11.08	3.11	270.36
YOR013W	YOR013w	0.96	1.30	1.55	2.00	2.16	2.31	2.83	0.06	34.88	9.41	37.71	9.47	299.08
YOR014W	RTS1	0.97	1.27	1.43	1.78	1.98	2.14	0.15	-0.06	3.91	1.08	4.05	1.02	257.24
YOR015W	YOR015w	0.98	1.29	1.50	1.89	2.06	2.23	11.93	8.51	63.20	51.45	75.12	59.96	327.00
YOR016C	ERP4	0.97	1.30	1.54	2.02	2.19	2.37	0.15	-0.03	11.50	4.91	11.65	4.88	277.72
YOR017W	PET127	0.92	1.18	1.35	1.73	1.92	2.16	0.22	-0.13	3.12	-0.17	3.34	-0.30	279.11
YOR018W	ROD1	0.98	1.24	1.34	1.71	1.95	2.17	0.11	-0.60	7.66	1.14	7.77	0.54	303.14
YOR019W	YOR019w	1.06	1.45	1.65	2.05	2.23	2.34	0.23	-0.18	5.78	0.73	6.01	0.55	284.45
YOR020W-A	YOR020w-a	0.92	1.20	1.33	1.68	1.89	2.07	3.80	3.83	41.24	28.70	45.04	32.53	270.99
YOR021C	YOR021c	1.00	1.35	1.57	1.95	2.14	2.28	2.01	0.01	14.52	1.05	16.53	1.05	287.86
YOR022C	YOR022c	0.96	1.35	1.64	2.04	2.19	2.34	0.57	1.60	7.68	11.41	8.25	13.01	247.45
YOR023C	AHC1	0.98	1.40	1.66	2.05	2.20	2.35	0.39	1.06	13.28	7.66	13.67	8.72	273.77
YOR024W	YOR024w	0.96	1.36	1.61	2.03	2.19	2.31	1.20	0.27	23.82	13.09	25.02	13.37	274.14
YOR025W	HST3	1.01	1.36	1.62	2.03	2.21	2.34	1.20	0.31	27.50	12.30	28.70	12.61	275.29
YOR026W	BUB3	1.00	1.31	1.50	1.83	1.99	2.18	35.67	14.35	97.88	74.19	133.54	88.54	349.15
YOR026W	BUB3	0.89	1.16	1.24	1.46	1.63	1.77	30.92	15.82	88.70	55.93	119.62	71.75	333.35
YOR027W	STI1	0.93	1.21	1.41	1.88	2.06	2.25	11.06	3.74	65.90	32.38	76.97	36.13	318.49
YOR028C	CIN5	0.95	1.27	1.50	1.95	2.11	2.28	1.94	0.61	31.06	20.58	33.00	21.19	297.64
YOR029W	YOR029w	0.93	1.23	1.42	1.86	2.08	2.29	0.19	0.00	0.33	-0.81	0.52	-0.81	276.11
YOR030W	DFG16	0.99	1.35	1.60	2.00	2.15	2.30	3.38	0.85	41.34	22.08	44.72	22.93	301.59
YOR031W	CRS5	1.00	1.34	1.52	1.98	2.20	2.37	0.58	-0.04	0.84	-0.69	1.41	-0.72	267.81
YOR032C	HMS1	0.98	1.33	1.58	1.95	2.10	2.23	12.05	0.89	57.89	22.40	69.93	23.29	328.40
YOR033C	EXO1	1.07	1.50	1.79	2.16	2.30	2.42	1.12	0.14	25.99	9.78	27.11	9.92	284.27
YOR034C	AKR2	1.02	1.44	1.69	2.04	2.18	2.30	1.92	0.24	32.14	13.46	34.06	13.70	292.63
YOR034C-A	YOR034c-a	0.98	1.27	1.39	1.82	2.02	2.17	2.31	2.24	31.36	22.48	33.67	24.72	262.09
YOR035C	SHE4	0.93	1.14	1.28	1.55	1.71	1.93	-0.05	-0.06	0.64	-0.93	0.59	-0.99	219.31
YOR036W	PEP12	0.91	1.17	1.29	1.58	1.77	1.97	3.95	1.89	51.00	45.28	54.95	47.17	306.27
YOR037W	CYC2	1.03	1.45	1.72	2.13	2.27	2.40	0.42	2.32	16.68	8.14	17.10	10.45	273.09
YOR038C	HIR2	0.98	1.32	1.56	1.98	2.15	2.29	2.63	0.48	39.45	15.86	42.09	16.34	298.50
YOR039W	CKB2	0.95	1.13	1.22	1.58	1.77	1.99	19.74	7.44	72.96	51.27	92.70	58.71	367.97
YOR040W	GLO4	0.99	1.40	1.66	2.10	2.26	2.38	0.22	0.06	9.49	0.53	9.71	0.59	275.85
YOR041C	YOR041c	1.00	1.32	1.55	1.98	2.15	2.32	3.56	1.43	43.09	27.80	46.64	29.23	297.13
YOR042W	CUE5	0.99	1.38	1.63	2.04	2.22	2.35	0.11	0.04	6.68	3.07	6.79	3.11	278.32
YOR043W	WHI2	1.04	1.39	1.58	2.07	2.26	2.38	0.52	-0.10	23.10	10.86	23.63	10.76	290.64

ORF.name	Strain	Optical density at 600 nm at regular intervals (h)						GLUCOSE		FRUCTOSE		TOTAL SUGARS (g/l)		TOTAL AMINO ACIDS (mg/L)
		0	26	33	48	59	78	102 h	118 h	102 h	118 h	102 h	118 h	102 h
YOR044W	*IRC23*	0.98	1.37	1.60	2.02	2.19	2.32	**0.12**	**2.13**	**8.68**	**2.75**	**8.81**	**4.89**	**284.47**
YOR045W	*TOM6*	0.98	1.37	1.56	1.94	2.14	2.30	**-0.01**	**-0.04**	**1.72**	**-0.56**	**1.71**	**-0.61**	**281.73**
YOR047C	*STD1*	1.00	1.38	1.61	1.99	2.17	2.31	**0.33**	**1.62**	**12.47**	**4.06**	**12.81**	**5.68**	**274.39**
YOR049C	*RSB1*	0.96	1.28	1.53	1.91	2.08	2.25	**4.15**	**2.25**	**43.04**	**10.75**	**47.19**	**13.00**	**305.33**
YOR050C	*YOR050c*	0.96	1.36	1.61	2.00	2.15	2.29	**0.37**	**0.28**	**16.79**	**4.29**	**17.16**	**4.57**	**280.11**
YOR051C	*YOR051c*	0.99	1.29	1.55	2.00	2.15	2.31	**4.44**	**1.96**	**39.65**	**13.35**	**44.09**	**15.32**	**297.26**
YOR052C	*YOR052c*	0.95	1.36	1.62	2.00	2.14	2.27	**1.19**	**0.16**	**25.67**	**9.41**	**26.86**	**9.58**	**273.84**
YOR053W	*YOR053w*	0.97	1.26	1.50	1.92	2.07	2.22	**7.34**	**3.83**	**49.07**	**38.97**	**56.40**	**42.80**	**309.68**
YOR054C	*VHS3*	0.97	1.34	1.58	1.98	2.13	2.28	**3.34**	**1.40**	**38.40**	**24.65**	**41.74**	**26.06**	**301.97**
YOR055W	*YOR055w*	0.99	1.32	1.55	1.88	2.03	2.20	**2.72**	**1.01**	**33.45**	**19.98**	**36.17**	**20.99**	**300.77**
YOR058C	*ASE1*	0.94	1.28	1.55	1.97	2.13	2.26	**2.36**	**0.49**	**33.66**	**16.82**	**36.02**	**17.31**	**282.97**
YOR059C	*YOR059c*	1.02	1.34	1.55	2.03	2.22	2.36	**5.07**	**1.02**	**48.78**	**26.97**	**53.85**	**27.98**	**277.70**
YOR061W	*CKA2*	1.01	1.41	1.58	1.88	2.08	2.25	**0.02**	**2.50**	**3.97**	**3.00**	**3.99**	**5.49**	**297.53**
YOR062C	*YOR062c*	0.99	1.33	1.51	1.91	2.12	2.28	**0.15**	**-0.01**	**4.99**	**-0.15**	**5.14**	**-0.17**	**273.27**
YOR064C	*YNG1*	0.99	1.42	1.65	1.98	2.15	2.27	**0.26**	**-0.01**	**15.73**	**7.66**	**15.98**	**7.65**	**276.04**
YOR065W	*CYT1*	0.88	1.18	1.17	0.97	0.96	0.96	**129.75**	**122.89**	**129.94**	**125.04**	**259.69**	**247.93**	**524.36**
YOR066W	*MSA1*	1.04	1.48	1.72	2.08	2.25	2.36	**0.16**	**-0.02**	**6.87**	**2.01**	**9.02**	**1.98**	**267.02**
YOR067C	*ALG8*	1.02	1.32	1.48	1.88	2.07	2.24	**1.13**	**0.24**	**25.80**	**8.82**	**26.93**	**9.06**	**276.26**
YOR068C	*VAM10*	0.94	1.28	1.49	1.83	1.96	2.11	**4.04**	**0.21**	**46.69**	**11.82**	**50.74**	**12.03**	**338.62**
YOR069W	*VPS5*	0.94	1.28	1.44	1.71	1.86	2.01	**-0.02**	**-0.01**	**4.01**	**-0.47**	**3.99**	**-0.48**	**320.46**
YOR069W	*VPS5*	0.95	1.24	1.35	1.58	1.71	1.80	**27.30**	**11.96**	**84.12**	**48.52**	**111.43**	**60.48**	**390.80**
YOR070C	*GYP1*	1.03	1.46	1.72	2.08	2.20	2.32	**4.08**	**4.41**	**43.38**	**40.37**	**47.46**	**44.78**	**308.64**
YOR071C	*NRT1*	0.96	1.27	1.44	1.88	2.07	2.27	**-0.16**	**0.07**	**1.82**	**-0.53**	**1.67**	**-0.46**	**269.46**
YOR072W	*YOR072w*	0.99	1.37	1.62	2.07	2.22	2.35	**2.56**	**2.01**	**35.76**	**32.18**	**38.32**	**34.20**	**289.54**
YOR073W	*SGO1*	1.00	1.24	1.38	1.91	2.15	2.33	**2.87**	**0.67**	**39.53**	**21.32**	**42.40**	**21.99**	**282.28**
YOR076C	*SKI7*	0.98	1.29	1.48	1.88	2.08	2.21	**3.09**	**3.46**	**38.36**	**28.44**	**41.45**	**31.90**	**294.74**
YOR078W	*BUD21*	1.05	1.38	1.50	1.98	2.22	2.31	**16.90**	**8.94**	**71.49**	**63.41**	**88.39**	**72.35**	**322.33**
YOR079C	*ATX2*	1.03	1.49	1.70	2.11	2.28	2.38	**1.26**	**2.09**	**5.67**	**3.82**	**6.94**	**5.91**	**269.36**
YOR080W	*DIA2*	1.04	1.27	1.29	1.44	1.66	1.90	**55.16**	**26.76**	**103.87**	**86.91**	**159.03**	**113.67**	**374.59**
YOR081C	*TGL5*	0.99	1.31	1.50	1.89	2.11	2.27	**0.02**	**-0.21**	**9.44**	**2.25**	**9.47**	**2.04**	**279.24**
YOR082C	*YOR082c*	1.00	1.37	1.58	2.03	2.23	2.34	**1.82**	**0.02**	**32.78**	**9.51**	**34.60**	**9.53**	**253.21**
YOR083W	*WHI5*	0.98	1.31	1.48	1.92	2.13	2.30	**0.12**	**-0.05**	**16.30**	**3.33**	**16.42**	**3.28**	**270.58**
YOR084W	*LPX1*	0.97	1.33	1.57	1.96	2.14	2.26	**1.43**	**0.47**	**30.30**	**19.67**	**31.73**	**20.13**	**282.06**
YOR085W	*OST3*	1.00	1.33	1.53	1.98	2.18	2.33	**2.14**	**0.31**	**29.76**	**14.01**	**31.90**	**14.32**	**288.02**
YOR086C	*TCB1*	1.04	1.47	1.70	2.11	2.26	2.34	**1.02**	**0.58**	**27.76**	**19.89**	**28.77**	**20.48**	**295.54**
YOR087W	*YVC1*	1.10	1.49	1.71	2.18	2.35	2.46	**0.54**	**0.21**	**15.27**	**11.41**	**15.81**	**11.62**	**288.00**
YOR087W	*YVC1*	0.92	1.22	1.35	1.70	1.90	2.05	**7.71**	**2.30**	**52.75**	**22.72**	**60.46**	**25.02**	**301.36**
YOR088W	*YOR088W*	0.98	1.22	1.41	1.86	2.01	2.18	**19.44**	**5.34**	**69.39**	**40.93**	**88.82**	**46.27**	**341.94**
YOR089C	*VPS21*	1.08	1.37	1.54	1.89	2.02	2.17	**10.73**	**0.89**	**79.46**	**46.05**	**90.18**	**46.95**	**356.58**
YOR090C	*PTC5*	1.02	1.29	1.48	1.88	2.04	2.20	**11.79**	**1.05**	**60.02**	**24.70**	**71.80**	**25.75**	**331.33**
YOR091W	*TMA46*	0.99	1.28	1.48	1.87	2.01	2.17	**13.06**	**0.07**	**60.44**	**10.14**	**73.51**	**10.21**	**328.30**
YOR092W	*ECM3*	1.03	1.38	1.60	2.01	2.16	2.29	**14.27**	**0.21**	**62.30**	**6.71**	**76.56**	**6.91**	**337.13**
YOR093C	*YOR093c*	1.03	1.29	1.51	1.96	2.10	2.26	**15.25**	**0.74**	**61.75**	**13.93**	**77.00**	**14.67**	**340.70**
YOR094W	*ARF3*	1.00	1.34	1.55	1.95	2.09	2.24	**5.09**	**2.08**	**43.58**	**13.93**	**48.67**	**16.01**	**301.92**
YOR096W	*RPS7a*	0.96	1.38	1.51	1.83	1.90	2.20	**11.98**	**4.70**	**57.08**	**33.12**	**69.06**	**37.83**	**343.10**
YOR097C	*YOR097c*	0.95	1.24	1.41	1.91	2.10	2.16	**8.39**	**1.57**	**52.98**	**19.89**	**61.38**	**21.45**	**319.31**
YOR099W	*KTR1*	1.01	1.41	1.65	2.07	2.23	2.28	**7.06**	**1.20**	**50.63**	**14.84**	**57.69**	**16.05**	**317.86**
YOR100C	*CRC1*	1.11	1.53	1.76	2.19	2.36	2.43	**1.32**	**1.08**	**20.10**	**3.61**	**21.42**	**4.69**	**295.69**
YOR101W	*RAS1*	0.99	1.33	1.54	1.97	2.14	2.21	**2.81**	**2.47**	**32.04**	**6.80**	**34.85**	**9.27**	**291.06**
YOR104W	*PIN2*	1.02	1.38	1.61	2.04	2.22	2.28	**3.30**	**0.74**	**35.84**	**5.09**	**39.14**	**5.83**	**298.04**
YOR105W	*YOR105w*	1.00	1.36	1.58	2.01	2.19	2.25	**1.98**	**1.02**	**26.31**	**5.68**	**28.29**	**6.70**	**292.02**
YOR106W	*VAM3*	1.04	1.32	1.47	1.83	2.00	2.06	**46.73**	**26.31**	**108.10**	**88.89**	**154.83**	**115.20**	**419.47**
YOR107W	*RGS2*	1.04	1.41	1.63	2.06	2.23	2.32	**4.60**	**0.80**	**43.64**	**5.48**	**48.24**	**6.27**	**310.14**
YOR108W	*LEU9*	1.06	1.34	1.57	2.08	2.25	2.33	**17.05**	**1.78**	**67.29**	**24.63**	**84.34**	**26.40**	**348.50**
YOR109W	*INP53*	0.97	1.26	1.44	1.92	2.12	2.21	**17.89**	**1.33**	**67.33**	**16.38**	**85.22**	**17.71**	**371.70**
YOR111W	*YOR111w*	1.03	1.41	1.64	2.06	2.21	2.28	**9.46**	**1.06**	**54.79**	**11.34**	**64.25**	**12.40**	**328.91**
YOR112W	*CEX1*	1.00	1.34	1.54	2.01	2.18	2.25	**7.55**	**1.38**	**52.67**	**15.83**	**60.21**	**17.22**	**323.44**
YOR113W	*AZF1*	0.97	1.24	1.41	1.87	2.03	2.10	**20.30**	**6.68**	**73.11**	**45.08**	**93.41**	**51.76**	**360.66**
YOR114W	*YOR114w*	1.02	1.47	1.72	2.11	2.25	2.29	**5.06**	**1.13**	**42.93**	**13.85**	**47.98**	**14.98**	**316.34**
YOR115C	*TRS33*	1.08	1.51	1.72	2.15	2.29	2.36	**2.51**	**0.90**	**30.85**	**7.63**	**33.36**	**8.53**	**300.33**
YOR118W	*RTC5*	1.03	1.45	1.67	2.05	2.22	2.28	**6.13**	**1.07**	**47.82**	**12.24**	**53.96**	**13.31**	**315.51**
YOR120W	*GCY1*	1.05	1.47	1.71	2.10	2.27	2.33	**1.61**	**1.05**	**24.87**	**5.52**	**26.48**	**6.57**	**290.20**
YOR121C	*YOR121c*	1.05	1.49	1.75	2.15	2.30	2.36	**3.86**	**0.95**	**41.35**	**8.03**	**45.21**	**8.99**	**307.85**
YOR123C	*LEO1*	1.01	1.33	1.57	2.00	2.19	2.26	**16.29**	**3.87**	**71.79**	**40.31**	**88.08**	**44.19**	**333.95**
YOR124C	*UBP2*	1.01	1.34	1.56	2.04	2.24	2.32	**2.46**	**0.99**	**37.12**	**7.50**	**39.58**	**8.49**	**303.85**
YOR125C	*CAT5*	1.10	1.19	1.17	1.21	1.26	1.18	**119.41**	**119.59**	**129.43**	**130.06**	**248.84**	**249.65**	**546.23**
YOR126C	*IAH1*	1.09	1.50	1.74	2.16	2.31	2.39	**9.06**	**3.84**	**53.44**	**31.35**	**62.50**	**35.19**	**346.67**
YOR127W	*RGA1*	0.97	1.24	1.40	1.89	2.10	2.21	**11.90**	**1.55**	**62.00**	**15.76**	**73.90**	**17.31**	**335.46**
YOR128C	*ADE2*	0.88	1.15	1.16	1.14	1.23	1.31	**102.56**	**99.21**	**133.86**	**101.30**	**236.41**	**200.51**	**459.62**
YOR129C	*AFI1*	1.02	1.40	1.61	2.06	2.21	2.28	**11.42**	**2.15**	**59.14**	**27.50**	**70.57**	**29.65**	**332.08**
YOR130C	*ORT1*	1.01	1.42	1.66	2.10	2.25	2.32	**3.40**	**1.05**	**36.25**	**8.64**	**39.65**	**9.69**	**307.33**
YOR131C	*YOR131c*	1.01	1.35	1.57	2.05	2.24	2.29	**5.88**	**1.97**	**43.43**	**22.87**	**49.31**	**24.85**	**303.92**
YOR132W	*VPS17*	1.03	1.42	1.62	1.98	2.10	2.14	**24.64**	**14.57**	**81.87**	**62.76**	**106.51**	**77.33**	**387.81**
YOR133W	*EFT1*	1.03	1.39	1.60	2.04	2.22	2.29	**8.18**	**1.12**	**51.16**	**19.10**	**59.34**	**20.21**	**312.74**
YOR134W	*BAG7*	0.99	1.32	1.50	1.94	2.14	2.24	**1.18**	**0.96**	**17.89**	**4.06**	**19.07**	**5.02**	**297.40**
YOR135C	*YOR135c*	1.11	1.52	1.73	2.14	2.30	2.39	**5.51**	**1.36**	**50.42**	**20.37**	**55.94**	**21.73**	**327.20**
YOR136W	*IDH2*	1.00	1.25	1.44	1.96	2.15	2.22	**16.62**	**5.48**	**66.05**	**42.05**	**82.67**	**47.53**	**343.79**
YOR137C	*SIA1*	1.08	1.38	1.63	2.09	2.27	2.33	**19.79**	**10.79**	**71.76**	**52.46**	**91.55**	**63.25**	**342.79**
YOR138C	*RUP1*	0.95	0.93	0.99	1.06	1.12	1.14	**41.33**	**18.31**	**98.55**	**76.80**	**139.88**	**95.11**	**341.71**
YOR139C	*YOR139c*	0.99	1.04	1.05	1.10	1.14	1.19	**109.84**	**98.54**	**135.51**	**134.64**	**245.35**	**233.19**	**476.56**
YOR140W	*SFL1*	0.93	0.98	0.99	1.04	1.11	1.25	**79.25**	**45.36**	**123.71**	**101.71**	**202.96**	**147.06**	**416.70**
YOR141C	*ARF8*	1.00	1.07	1.10	1.31	1.46	1.56	**57.75**	**41.13**	**107.31**	**92.50**	**165.06**	**133.63**	**372.36**
YOR142W	*LSC1*	0.92	0.99	1.03	1.34	1.54	1.69	**49.19**	**14.61**	**101.36**	**66.13**	**150.55**	**80.73**	**384.56**
YOR144C	*ELG1*	0.95	1.01	1.05	1.27	1.51	1.71	**39.67**	**2.92**	**91.28**	**30.30**	**130.94**	**33.22**	**338.68**
YOR147W	*MDM32*	0.89	1.22	1.30	1.70	1.93	2.10	**6.66**	**1.43**	**52.18**	**17.47**	**58.85**	**18.90**	**269.55**
YOR150W	*MRPL23*	0.83	0.98	1.10	1.42	1.67	1.78	**2.62**	**0.66**	**33.59**	**5.83**	**36.21**	**6.50**	**279.46**
YOR152C	*YOR152c*	0.97	1.06	1.11	1.39	1.64	1.80	**34.29**	**10.89**	**89.22**	**61.23**	**123.52**	**72.12**	**344.24**
YOR153W	*PDR5*	0.98	1.05	1.06	1.23	1.41	1.49	**28.55**	**30.81**	**84.90**	**87.49**	**113.45**	**118.30**	**319.74**
YOR154W	*SLP1*	0.96	1.04	1.06	1.16	1.27	1.29	**40.15**	**36.09**	**94.15**	**93.76**	**134.30**	**129.85**	**356.14**
YOR155C	*ISN1*	1.02	1.10	1.12	1.31	1.48	1.57	**42.15**	**22.95**	**96.21**	**74.86**	**138.36**	**97.81**	**354.85**
YOR156C	*NFI1*	0.98	1.04	1.04	1.12	1.26	1.36	**74.95**	**48.82**	**115.93**	**99.88**	**190.88**	**148.70**	**386.66**
YOR158W	*PET123*	0.92	1.10	1.22	1.62	1.94	2.09	**1.57**	**0.72**	**21.66**	**7.63**	**23.23**	**8.34**	**242.35**
YOR161C	*PNS1*	0.99	1.03	1.04	1.12	1.30	1.39	**78.51**	**53.98**	**116.09**	**102.14**	**194.59**	**156.12**	**393.74**
YOR161C-C	*YOR161c-c*	0.92	1.25	1.39	1.80	2.00	2.14	**3.91**	**6.38**	**41.76**	**37.17**	**45.67**	**43.55**	**274.11**
YOR162C	*YRR1*	1.01	1.07	1.07	1.19	1.29	1.44	**70.33**	**27.20**	**120.27**	**87.43**	**190.59**	**114.63**	**400.68**
YOR163W	*DDP1*	0.97	1.02	1.02	1.18	1.37	1.56	**77.36**	**34.64**	**117.48**	**97.73**	**194.84**	**132.37**	**430.47**
YOR164C	*GET4*	0.93	0.98	0.99	1.08	1.19	1.23	**50.80**	**26.35**	**105.96**	**86.39**	**156.76**	**112.74**	**374.49**
YOR165W	*SEY1*	1.00	1.06	1.08	1.26	1.42	1.52	**31.30**	**8.84**	**90.30**	**62.39**	**121.60**	**71.23**	**356.33**
YOR166C	*SWT1*	1.02	1.18	1.25	1.69	1.90	2.05	**32.47**	**7.18**	**86.39**	**53.66**	**118.86**	**60.83**	**353.44**
YOR167C	*RPS28a*	0.99	1.10	1.11	1.32	1.47	1.53	**27.95**	**9.27**	**85.04**	**59.22**	**113.00**	**68.49**	**350.99**
YOR170W	*YOR170w*	1.03	1.10	1.10	1.29	1.43	1.48	**52.24**	**23.68**	**110.18**	**82.36**	**162.42**	**106.04**	**393.05**
YOR171C	*LCB4*	1.02	1.11	1.11	1.26	1.44	1.51	**75.25**	**32.83**	**119.71**	**88.42**	**194.95**	**121.25**	**437.45**
YOR172W	*YRM1*	1.00	1.09	1.08	1.14	1.22	1.26	**64.21**	**26.55**	**116.86**	**83.68**	**181.07**	**110.23**	**390.61**
YOR173W	*DCS2*	1.00	1.09	1.07	1.16	1.30	1.63	**78.41**	**68.33**	**119.12**	**114.78**	**197.53**	**183.11**	**401.85**
YOR175C	*ALE1*	1.02	1.09	1.09	1.15	1.29	1.43	**60.08**	**43.97**	**107.18**	**93.12**	**167.26**	**137.09**	**378.44**
YOR177C	*MPC54*	0.96	1.02	1.04	1.14	1.21	1.27	**43.88**	**17.85**	**100.80**	**74.00**	**144.69**	**91.84**	**355.99**
YOR178C	*GAC1*	1.00	1.09	1.12	1.27	1.37	1.48	**54.32**	**25.21**	**113.95**	**86.74**	**168.27**	**111.95**	**369.41**
YOR179C	*SYC1*	0.94	1.12	1.33	1.77	2.00	2.17	**5.77**	**0.80**	**44.35**	**4.99**	**50.11**	**5.79**	**294.49**
YOR180C	*DCI1*	0.93	1.17	1.39	1.86	2.04	2.19	**17.68**	**4.04**	**65.58**	**37.45**	**83.26**	**41.49**	**307.89**
YOR182C	*RPS30b*	0.89	0.95	0.97	1.20	1.39	1.58	**31.83**	**15.93**	**91.62**	**71.93**	**123.45**	**87.86**	**330.05**
YOR183W	*FYV12*	1.00	1.12	1.15	1.52	1.75	1.91	**18.34**	**10.82**	**72.33**	**61.26**	**90.67**	**72.07**	**313.55**
YOR184W	*SER1*	0.85	1.14	1.23	1.59	1.85	2.05	**1.52**	**1.37**	**14.86**	**3.71**	**16.38**	**5.08**	**277.20**
YOR184W	*SER1*	0.97	1.25	1.40	2.00	2.29	2.32	**7.96**	**1.51**	**49.63**	**12.02**	**57.59**	**13.53**	**311.65**
YOR185C	*GSP2*	0.96	1.10	1.18	1.71	1.97	2.08	**30.44**	**10.35**	**94.25**	**61.74**	**124.70**	**72.10**	**354.54**
YOR186W	*YOR186w*	0.93	1.02	1.03	1.30	1.55	1.65	**26.71**	**9.40**	**92.46**	**59.09**	**119.16**	**68.49**	**336.52**
YOR187W	*TUF1*	0.87	1.16	1.30	1.64	1.83	1.90	**4.60**	**1.50**	**39.11**	**11.82**	**43.71**	**13.32**	**230.12**
YOR188W	*MSB1*	1.02	1.13	1.16	1.50	1.73	1.87	**45.22**	**20.89**	**102.47**	**81.04**	**147.69**	**101.93**	**361.40**
YOR188W	*MSB1*	0.84	1.16	1.28	1.56	1.79	1.94	**5.71**	**3.64**	**42.63**	**29.79**	**48.34**	**33.44**	**295.71**
YOR189W	*IES4*	0.95	1.03	1.03	1.13	1.29	1.39	**55.67**	**41.55**	**106.94**	**98.37**	**162.60**	**139.93**	**392.93**
YOR190W	*SPR1*	0.97	1.04	1.06	1.38	1.71	1.94	**39.92**	**8.38**	**102.60**	**61.10**	**142.51**	**69.47**	**342.15**
YOR191W	*ULS1*	1.02	1.11	1.13	1.29	1.45	1.49	**42.69**	**19.91**	**100.13**	**81.31**	**142.82**	**101.22**	**353.01**
YOR192C	*THI72*	0.96	1.09	1.13	1.32	1.50	1.62	**27.97**	**16.37**	**84.68**	**72.50**	**112.65**	**88.88**	**339.91**
YOR193W	*PEX27*	0.95	1.03	1.05	1.18	1.29	1.38	**28.92**	**15.76**	**85.37**	**73.68**	**114.30**	**89.44**	**348.15**
YOR195W	*SLK19*	0.99	1.07	1.08	1.29	1.45	1.57	**56.91**	**15.71**	**110.35**	**72.26**	**167.27**	**87.97**	**398.32**
YOR196C	*LIP5*	0.96	1.05	1.07	1.38	1.57	1.68	**36.15**	**17.65**	**96.55**	**77.75**	**132.70**	**95.39**	**359.58**
YOR197W	*MCA1*	0.90	0.98	1.00	1.20	1.36	1.47	**1.18**	**2.06**	**16.93**	**5.88**	**18.11**	**7.94**	**295.19**
YOR198C	*BFR1*	0.94	1.08	1.10	1.31	1.46	1.51	**70.42**	**44.91**	**121.52**	**95.16**	**191.94**	**140.06**	**411.36**
YOR199W	*YOR199w*	0.89	1.16	1.28	1.61	1.79	1.91	**6.04**	**3.32**	**46.68**	**33.59**	**52.72**	**36.91**	**238.34**
YOR200W	*YOR200w*	1.02	1.29	1.44	1.60	1.80	1.86	**44.20**	**31.18**	**95.39**	**83.79**	**139.59**	**114.97**	**315.45**
YOR201C	*MRM1*	0.89	1.00	1.05	0.90	0.94	0.88	**74.72**	**44.80**	**122.82**	**104.48**	**197.53**	**149.28**	**344.70**
YOR202W	*HIS3*	1.03	1.18	1.26	1.80	2.08	2.24	**37.37**	**6.32**	**90.53**	**49.68**	**127.90**	**56.00**	**351.05**
YOR205C	*GEP3*	0.91	1.07	1.09	0.95	0.97	1.02	**80.32**	**49.10**	**127.90**	**107.48**	**208.22**	**156.58**	**356.64**
YOR208W	*PTP2*	1.01	1.13	1.15	1.25	1.36	1.39	**22.74**	**7.95**	**75.62**	**52.41**	**98.36**	**60.36**	**332.01**
YOR209C	*NPT1*	0.95	1.17	1.17	1.29	1.48	1.59	**89.38**	**62.64**	**123.60**	**113.26**	**212.98**	**175.90**	**373.96**

ORF.name	Strain	Optical density at 600 nm at regular intervals (h)						GLUCOSE		FRUCTOSE		TOTAL SUGARS (g/l)		TOTAL AMINO ACIDS (mg/L)
		0	26	33	48	59	78	102 h	118 h	102 h	118 h	102 h	118 h	102 h
YOR209C	NPT1	0.85	1.21	1.32	1.62	1.84	1.98	54.83	49.98	102.01	100.76	156.84	150.74	292.67
YOR211C	MGM1	1.00	1.16	1.18	1.08	1.24	1.64	39.70	22.35	97.48	81.00	137.18	103.35	259.85
YOR212W	STE4	0.90	0.99	1.00	1.29	1.51	1.67	35.55	8.32	91.94	57.28	127.49	65.60	356.09
YOR213C	SAS5	0.95	1.07	1.13	1.67	1.94	2.09	33.83	12.68	98.52	66.15	132.35	78.84	356.41
YOR214C	YOR214c	0.88	0.98	1.01	1.47	1.74	1.88	19.71	12.63	73.95	64.83	93.67	77.46	338.10
YOR215C	AIM41	0.88	1.00	1.02	1.33	1.57	1.70	19.17	2.29	81.93	32.15	101.10	34.45	333.92
YOR216C	RUD3	0.94	1.10	1.17	1.59	1.80	1.91	22.56	7.72	87.27	55.47	109.83	63.19	335.41
YOR219C	STE13	0.93	1.05	1.06	1.37	1.55	1.66	21.96	8.55	75.52	55.54	97.48	64.09	337.60
YOR220W	RCN2	0.92	1.02	1.02	1.24	1.42	1.51	21.23	10.29	78.52	63.70	99.76	73.98	344.05
YOR221C	MCT1	0.93	1.25	1.44	1.78	2.00	2.15	1.80	1.38	20.68	8.71	22.49	10.09	277.00
YOR222W	ODC2	0.95	1.24	1.48	1.95	2.12	2.18	4.07	0.98	41.68	7.46	45.75	8.44	303.93
YOR223W	YOR223w	0.97	1.12	1.17	1.53	1.74	1.85	19.76	3.75	75.65	39.79	95.41	43.54	312.04
YOR225W	YOR225w	0.96	1.06	1.09	1.42	1.71	1.89	44.85	16.33	98.37	72.72	143.22	89.05	363.38
YOR226C	ISU2	0.90	0.97	0.99	1.17	1.27	1.33	24.65	10.06	85.12	61.76	109.77	71.82	337.90
YOR227W	HER1	0.97	1.19	1.20	1.40	1.53	1.63	23.31	10.94	80.38	61.90	103.68	72.84	336.56
YOR228C	YOR228c	0.90	1.02	1.02	1.11	1.34	1.69	13.07	9.38	64.86	59.52	77.93	68.89	319.82
YOR229W	WTM2	0.92	1.05	1.08	1.42	1.61	1.72	18.84	4.94	78.38	38.42	97.22	43.36	333.67
YOR230W	WTM1	0.95	1.06	1.07	1.35	1.56	1.68	25.14	4.45	88.19	40.20	113.33	44.65	347.44
YOR231W	MKK1	0.94	1.03	1.04	1.27	1.46	1.54	23.48	3.27	80.82	35.26	104.30	38.52	342.96
YOR233W	KIN4	1.00	1.12	1.17	1.59	1.84	1.97	15.08	2.95	74.70	35.26	89.78	38.20	310.53
YOR234C	RPL33b	1.02	1.12	1.13	1.37	1.56	1.64	18.61	7.67	75.05	56.93	93.66	64.61	319.61
YOR235W	YOR235w	1.00	1.10	1.10	1.32	1.54	1.65	20.34	1.26	79.86	24.02	100.20	25.29	328.88
YOR237W	HES1	0.97	1.08	1.10	1.39	1.59	1.65	32.60	9.24	92.59	59.30	125.18	68.54	336.22
YOR238W	YOR238w	0.99	1.09	1.11	1.27	1.40	1.43	94.77	24.85	129.56	80.63	224.33	105.48	450.25
YOR239W	ABP140	0.94	0.99	1.01	1.19	1.30	1.38	44.23	13.41	97.68	70.87	141.91	84.27	371.22
YOR239W	ABP140	1.04	1.44	1.62	2.02	2.17	2.28	10.71	1.59	58.94	19.34	69.65	20.92	311.80
YOR240W	YOR240W	0.94	1.02	1.06	1.44	1.69	1.85	45.53	24.14	101.74	87.47	147.27	111.61	363.28
YOR241W	MET7	0.90	1.20	1.24	1.33	1.68	1.95	34.92	18.72	86.88	69.87	121.80	88.59	356.47
YOR242C	SSP2	0.99	1.30	1.26	1.51	1.71	1.81	33.67	11.76	94.32	70.25	128.00	82.01	343.74
YOR243C	PUS7	0.93	1.03	1.04	1.26	1.43	1.53	14.38	5.38	68.34	52.44	82.72	57.81	315.48
YOR245C	DGA1	1.02	1.17	1.24	1.68	1.91	2.04	19.69	5.47	73.88	45.37	93.57	50.84	332.61
YOR246C	YOR246c	1.02	1.17	1.27	1.75	1.99	2.09	15.98	3.49	68.61	39.21	84.59	42.69	322.82
YOR247W	SRL1	1.01	1.18	1.31	1.89	2.09	2.15	14.87	6.43	67.83	51.06	82.71	57.48	304.89
YOR248W	YOR248w	0.95	1.06	1.08	1.38	1.58	1.62	26.67	14.85	84.67	77.10	111.34	91.95	340.79
YOR251C	TUM1	1.07	1.21	1.25	1.56	1.78	1.93	32.66	7.33	89.65	52.54	122.32	59.87	337.20
YOR252W	TMA16	0.95	1.07	1.07	1.31	1.52	1.63	30.09	5.63	88.65	48.14	118.74	53.77	343.75
YOR253W	NAT5	0.97	1.07	1.07	1.24	1.45	1.56	34.69	10.39	92.43	62.33	127.11	72.73	352.81
YOR255W	OSW1	0.97	1.00	1.03	1.17	1.31	1.42	59.03	39.90	104.31	101.97	163.33	141.86	394.39
YOR258W	HNT3	1.01	1.13	1.16	1.32	1.45	1.57	71.11	43.67	117.42	100.63	188.54	144.30	388.47
YOR263C	YOR263c	0.98	1.11	1.12	1.35	1.58	1.74	46.65	8.92	102.47	58.25	149.12	67.18	379.63
YOR264W	DSE3	0.92	1.08	1.14	1.54	1.74	1.84	24.68	8.43	81.74	56.20	106.42	64.62	341.33
YOR265W	RBL2	0.93	1.12	1.31	1.81	1.98	2.10	42.90	37.04	95.13	90.66	138.03	127.70	334.78
YOR266W	PNT1	0.93	1.21	1.44	1.91	2.06	2.19	8.50	0.73	54.86	6.98	63.36	7.71	306.76
YOR267C	HRK1	0.93	1.20	1.40	1.89	2.05	2.15	61.02	34.72	115.58	98.34	176.60	133.06	316.91
YOR268C	YOR268c	0.92	1.13	1.30	1.79	1.98	2.13	9.11	1.72	58.98	25.74	68.08	27.46	265.28
YOR269W	PAC1	0.89	1.04	1.18	1.63	1.83	2.00	14.41	5.84	68.02	47.93	82.43	53.77	314.80
YOR270C	VPH1	0.93	1.08	1.22	1.73	1.94	2.09	5.39	2.01	52.90	34.71	58.28	36.72	293.84
YOR271C	FSF1	0.88	1.06	1.26	1.82	2.01	2.15	8.23	10.96	50.06	56.28	58.29	67.25	302.19
YOR273C	TPO4	0.88	1.01	1.14	1.62	1.90	2.07	10.71	10.76	59.26	56.64	69.97	67.40	308.90
YOR274W	MOD5	0.90	1.03	1.21	1.84	1.96	1.93	5.93	0.70	39.06	6.19	44.99	6.89	266.75
YOR275C	RIM20	0.94	1.18	1.41	1.84	2.06	2.34	14.27	1.12	60.44	18.47	74.71	19.60	277.95
YOR276W	CAF20	0.88	1.02	1.19	1.62	1.85	2.00	8.28	1.87	49.76	25.16	58.05	27.03	261.95
YOR277C	YOR277c	0.89	1.04	1.09	1.56	1.81	1.90	25.89	7.74	84.86	55.93	110.74	63.67	332.08
YOR279C	RFM1	1.04	1.20	1.28	1.75	2.01	2.15	31.06	8.64	90.66	54.72	121.72	63.36	332.72
YOR280C	FSH3	0.97	1.08	1.12	1.47	1.67	1.79	27.78	13.13	86.62	68.05	114.40	81.18	342.91
YOR283W	YOR283w	0.98	1.12	1.15	1.51	1.78	1.93	16.84	5.03	78.46	53.05	95.31	58.08	320.04
YOR284W	HUA2	1.00	1.11	1.12	1.29	1.48	1.54	30.50	7.03	91.19	59.40	121.69	66.43	353.32
YOR285W	RDL1	0.97	1.07	1.07	1.29	1.52	1.63	40.76	8.23	100.57	58.35	141.33	66.59	363.06
YOR286W	RDL2	1.03	1.13	1.13	1.35	1.53	1.60	48.79	22.83	98.20	78.94	146.99	101.77	373.59
YOR288C	MPD1	0.97	1.15	1.29	1.77	1.96	2.16	9.28	2.65	52.59	31.54	61.87	34.19	307.90
YOR289W	YOR289w	0.98	1.25	1.42	1.82	1.99	2.16	14.28	0.37	58.72	16.76	73.00	17.13	328.97
YOR290C	SNF2	0.99	1.17	1.31	1.64	1.76	1.92	44.17	30.95	95.70	89.98	139.87	120.93	439.08
YOR291W	YPK9	0.96	1.22	1.42	1.83	1.99	2.21	0.50	-0.01	17.75	3.94	18.25	3.93	293.28
YOR292C	YOR292c	1.03	1.24	1.44	1.95	2.14	2.30	3.00	-0.18	37.07	7.82	40.06	7.63	317.44
YOR293C-A	YOR293c-a	0.94	1.21	1.35	1.78	2.01	2.17	1.11	1.14	8.15	16.58	9.26	17.72	264.55
YOR293W	RPS10a	1.05	1.28	1.44	1.82	1.94	2.08	74.51	69.44	111.49	111.90	186.00	181.34	436.39
YOR295W	UAF30	1.03	1.22	1.33	1.70	1.91	2.13	21.58	5.21	72.12	43.79	93.70	49.00	330.09
YOR296W	YOR296w	0.97	1.21	1.38	1.79	1.96	2.13	8.83	0.55	55.36	18.31	64.19	18.86	330.76
YOR297C	TIM18	1.03	1.38	1.58	1.96	2.10	2.24	7.84	0.01	49.77	3.74	57.61	3.75	310.33
YOR298C-A	MBF1	0.86	0.94	1.03	1.55	1.78	2.00	9.07	3.17	56.93	36.15	66.00	39.32	309.43
YOR298C-A	MBF1	0.91	1.10	1.32	1.78	2.03	2.19	6.95	0.71	46.22	6.70	53.18	7.41	278.70
YOR298C-A	MBF1	0.91	1.21	1.33	1.68	1.87	2.02	6.17	1.55	48.86	18.80	55.03	20.35	286.57
YOR298W	MUM3	1.05	1.41	1.66	2.05	2.17	2.31	16.09	0.31	66.53	10.02	82.62	10.33	333.27
YOR299W	BUD7	0.96	1.22	1.40	1.85	2.02	2.18	10.09	2.25	52.34	14.04	62.43	16.29	342.23
YOR300W	YOR300w	1.01	1.37	1.60	2.04	2.21	2.31	15.15	11.78	67.68	59.48	82.83	71.26	320.07
YOR300W	YOR300w	1.00	1.34	1.50	1.90	2.10	2.26	0.77	1.81	12.62	21.49	13.39	23.31	289.01
YOR301W	RAX1	1.02	1.32	1.50	1.92	2.10	2.27	0.84	0.13	25.29	5.20	26.14	5.33	293.51
YOR302W	YOR302w	0.87	1.07	1.27	1.72	1.96	2.13	0.99	0.70	18.23	5.99	19.22	6.69	276.68
YOR302W	YOR302w	0.97	1.27	1.53	1.96	2.09	2.23	2.52	0.01	34.51	5.03	37.03	5.05	289.54
YOR303W	CPA1	1.01	1.35	1.60	2.01	2.14	2.27	3.04	0.13	32.82	10.24	35.86	10.37	286.69
YOR303W	CPA1	0.87	1.11	1.33	1.74	1.95	2.09	1.24	2.02	19.98	25.57	21.22	27.59	261.97
YOR304C-A	YOR304c-a	1.00	1.29	1.54	1.97	2.11	2.25	11.42	2.06	60.06	30.37	71.48	32.43	323.64
YOR304W	ISW2	0.95	1.22	1.44	1.87	2.02	2.17	21.43	7.54	75.43	53.86	96.87	61.40	330.78
YOR305W	RRG7	1.01	1.21	1.43	1.92	2.11	2.28	23.73	8.33	72.08	55.39	95.81	63.73	327.70
YOR306C	MCH5	1.00	1.46	1.60	1.85	1.97	2.08	23.77	13.88	74.75	71.07	98.52	84.94	401.00
YOR306C	MCH5	1.06	1.46	1.65	2.05	2.21	2.31	8.44	13.59	57.85	62.81	66.28	76.40	324.26
YOR307C	SLY41	1.04	1.40	1.66	2.05	2.19	2.32	15.19	3.97	64.09	40.96	79.28	44.93	335.49
YOR308C	SNU66	1.01	1.32	1.54	1.96	2.11	2.26	15.92	2.01	65.11	28.75	81.04	30.76	341.29
YOR309C	YOR309c	1.00	1.33	1.47	1.94	2.17	2.30	21.29	13.10	72.94	62.49	94.23	75.59	336.14
YOR309C	YOR309c	1.03	1.36	1.51	1.94	2.13	2.28	8.22	12.23	56.83	60.39	65.05	72.61	300.60
YOR311C	DGK1	1.08	1.47	1.73	2.11	2.22	2.35	7.35	3.57	49.16	37.63	56.51	41.20	302.84
YOR312C	RPL20b	1.05	1.35	1.54	1.87	1.99	2.10	68.94	49.54	110.41	97.11	179.35	146.65	406.98
YOR313C	SPS4	1.02	1.36	1.56	1.95	2.09	2.23	6.97	0.25	48.52	6.48	55.49	6.73	305.88
YOR314W	YOR314w	1.05	1.37	1.61	2.05	2.21	2.35	4.82	0.10	44.56	3.94	49.38	4.04	313.56
YOR315W	SFG1	1.05	1.36	1.55	1.93	2.09	2.23	3.55	0.34	33.83	11.15	37.38	11.49	291.24
YOR316C	COT1	1.01	1.30	1.52	1.94	2.11	2.26	0.52	0.78	19.22	11.21	19.75	11.99	276.66
YOR316C-A	YOR316c-a	0.90	1.18	1.31	1.74	1.95	2.08	5.51	3.93	48.21	31.45	53.72	35.38	286.85
YOR317W	FAA1	0.93	1.43	1.60	1.89	2.04	2.18	10.95	3.82	46.75	20.41	57.70	24.23	331.42
YOR318C	YOR318c	1.00	1.30	1.54	1.96	2.12	2.28	3.56	2.53	40.08	22.28	43.64	24.81	299.57
YOR320C	GNT1	1.02	1.31	1.54	1.99	2.16	2.30	3.86	1.14	41.67	24.52	45.53	25.65	297.64
YOR321W	PMT3	1.02	1.34	1.56	1.99	2.16	2.31	8.38	2.12	52.23	30.19	60.61	32.31	314.64
YOR322C	LDB19	1.04	1.24	1.40	1.89	2.19	2.16	19.18	11.34	70.06	58.24	89.23	69.57	375.26
YOR323C	PRO2	0.86	1.13	1.25	1.51	1.74	1.99	1.41	1.25	3.42	1.98	4.83	3.23	331.36
YOR324C	FRT1	0.97	1.32	1.54	1.95	2.11	2.25	15.92	4.97	64.67	41.35	80.60	46.33	338.48
YOR325W	YOR325w	0.96	1.33	1.53	1.93	2.13	2.28	0.59	2.46	15.60	27.46	16.19	29.93	299.66
YOR327C	SNC2	1.03	1.42	1.65	2.03	2.18	2.31	2.48	5.52	34.15	39.99	36.63	45.50	286.41
YOR328W	PDR10	0.96	1.27	1.49	1.92	2.08	2.22	1.49	1.05	28.62	22.04	30.11	23.09	290.51
YOR330C	MIP1	0.89	1.04	1.04	0.92	0.91	0.88	126.17	127.25	120.90	141.33	247.07	268.57	512.69
YOR331C	YOR331c	0.91	1.02	1.09	1.24	1.55	1.79	34.16	18.59	102.19	64.73	136.35	83.32	320.89
YOR332W	VMA4	0.97	1.13	1.30	1.79	1.98	2.16	1.05	1.05	26.15	11.76	27.20	12.81	280.99
YOR333C	YOR333c	0.88	1.19	1.34	1.78	1.98	2.12	7.26	1.59	52.38	18.76	59.64	20.36	292.09
YOR334W	MRS2	1.01	1.36	1.54	1.91	2.08	2.22	0.45	0.12	15.89	3.98	16.34	4.10	269.89
YOR337W	TEA1	1.00	1.36	1.60	1.99	2.12	2.26	0.22	0.24	10.46	11.19	10.68	11.44	281.21
YOR338W	YOR338w	1.01	1.28	1.49	1.95	2.13	2.31	0.16	0.12	4.68	3.33	4.84	3.45	264.26
YOR339C	UBC11	0.98	1.28	1.52	1.96	2.12	2.25	10.47	2.71	56.49	32.08	66.96	34.79	317.42
YOR342C	YOR342c	0.98	1.27	1.53	1.96	2.11	2.25	8.24	5.01	51.90	41.45	60.14	46.46	311.40
YOR343C	YOR343c	1.03	1.35	1.63	2.10	2.26	2.40	0.09	0.10	5.32	3.07	5.41	3.17	261.35
YOR344C	TYE7	1.07	1.43	1.66	2.06	2.20	2.35	6.81	0.75	45.04	18.01	51.85	18.76	316.82
YOR345C	YOR345c	0.95	1.29	1.49	1.88	2.07	2.19	13.99	10.91	65.45	57.27	79.45	68.18	341.39
YOR346W	REV1	1.00	1.24	1.45	1.89	2.07	2.24	8.50	2.10	53.89	29.84	62.39	31.94	279.61
YOR347C	PYK2	1.03	1.41	1.62	2.00	2.14	2.28	2.02	3.71	32.61	35.82	34.63	39.53	284.37
YOR348C	PUT4	1.01	1.40	1.67	2.07	2.19	2.32	0.42	3.60	17.08	34.59	17.50	38.18	272.34
YOR349W	CIN1	1.01	1.41	1.65	2.03	2.16	2.29	1.56	0.27	29.83	4.78	31.38	5.04	286.13
YOR350C	MNE1	1.01	1.29	1.51	1.99	2.14	2.28	0.38	0.06	16.81	6.14	17.19	6.20	256.84
YOR351C	MEK1	1.02	1.32	1.50	1.89	2.05	2.20	0.92	0.44	25.70	17.64	26.63	18.09	279.49
YOR352W	YOR352w	0.98	1.32	1.51	1.91	2.09	2.27	0.04	-0.01	-0.20	0.55	-0.16	0.54	257.06
YOR354C	MSC6	1.01	1.36	1.61	1.99	2.11	2.26	2.95	1.09	30.51	23.74	33.46	24.83	281.53
YOR355W	GDS1	0.99	1.25	1.48	1.92	2.06	2.21	3.97	2.27	44.76	32.59	48.73	34.87	302.88
YOR356W	YOR356w	0.98	1.27	1.49	1.94	2.10	2.25	11.26	3.70	58.44	40.56	69.70	44.27	322.30
YOR357C	SNX3	0.97	1.13	1.31	1.76	1.96	2.16	8.80	3.11	56.60	37.11	65.40	40.22	319.71
YOR358W	HAP5	1.05	1.41	1.61	2.05	2.25	2.27	11.03	1.26	55.61	23.36	66.63	24.63	327.73
YOR359W	VTS1	1.05	1.34	1.60	2.10	2.26	2.39	0.75	0.35	21.66	13.54	22.41	13.88	270.38
YOR360C	PDE2	1.02	1.36	1.50	1.85	2.03	2.21	0.23	-0.04	0.79	-0.34	1.02	-0.38	266.83
YOR363C	PIP2	0.98	1.27	1.47	1.92	2.07	2.22	3.66	5.04	30.21	39.07	33.87	44.11	279.57

ORF.name	Strain	Optical density at 600 nm at regular intervals (h)						GLUCOSE		FRUCTOSE		TOTAL SUGARS (g/l)		TOTAL AMINO ACIDS (mg/L)
		0	26	33	48	59	78	102 h	118 h	102 h	118 h	102 h	118 h	102 h
YOR364W	*YOR364w*	0.93	1.18	1.38	1.79	1.97	2.08	1.01	0.76	17.01	4.17	18.02	4.93	281.93
YOR364W	*YOR364w*	0.90	1.01	1.14	1.66	1.87	2.05	5.59	1.54	44.77	24.10	50.36	25.65	295.64
YOR365C	*YOR365c*	1.04	1.37	1.60	2.00	2.13	2.26	0.40	0.19	14.62	8.38	15.02	8.57	272.02
YOR366W	*YOR366w*	0.88	1.16	1.31	1.68	1.88	2.03	18.55	9.59	74.10	53.29	92.65	62.88	335.91
YOR367W	*SCP1*	1.04	1.36	1.60	1.99	2.20	2.16	0.46	0.32	17.52	7.22	17.98	7.55	279.11
YOR368W	*RAD17*	1.03	1.35	1.55	1.94	2.12	2.27	0.50	0.81	17.70	21.69	18.21	22.50	276.90
YOR369C	*RPS12*	0.89	1.15	1.16	1.49	1.75	1.96	24.96	9.31	83.45	45.97	108.41	55.28	319.63
YOR371C	*GPB1*	1.00	1.40	1.60	2.01	2.16	2.33	0.11	0.07	0.12	0.58	0.23	0.64	247.66
YOR374W	*ALD4*	0.97	1.29	1.53	1.95	2.10	2.24	3.25	1.23	38.98	24.55	42.23	25.78	297.93
YOR375C	*GDH1*	1.01	1.33	1.57	2.02	2.16	2.31	5.34	4.67	46.12	38.43	51.46	43.10	276.98
YOR376W	*YOR376w*	1.00	1.35	1.58	1.98	2.13	2.27	2.15	1.45	33.48	26.27	35.63	27.72	296.29
YOR376W-A	*YOR376w-a*	0.86	1.15	1.26	1.65	1.87	1.99	7.44	2.19	54.74	24.32	62.19	26.51	288.37
YOR377W	*ATF1*	0.99	1.20	1.43	1.96	2.13	2.30	7.83	5.94	52.09	44.79	59.93	50.73	308.71
YOR378W	*YOR378w*	1.07	1.45	1.68	2.08	2.23	2.36	16.40	6.32	64.53	43.38	80.93	49.69	341.31
YOR379C	*YOR379c*	0.92	1.23	1.42	1.79	1.98	2.12	17.20	10.56	68.51	56.27	85.71	66.83	348.34
YOR380W	*RDR1*	1.00	1.41	1.65	2.04	2.18	2.30	17.83	1.93	73.27	29.35	91.10	31.28	343.43
YOR381W	*FRE3*	1.04	1.41	1.63	2.01	2.15	2.29	1.91	1.92	31.32	29.96	33.23	31.88	285.62
YOR382W	*FIT2*	1.05	1.44	1.66	2.02	2.14	2.28	0.42	0.99	16.32	24.70	16.74	25.69	271.53
YOR383C	*FIT3*	1.01	1.39	1.59	1.98	2.14	2.26	0.46	0.37	17.40	13.25	17.86	13.62	268.36
YOR384W	*FRE5*	0.97	1.29	1.50	1.90	2.06	2.20	0.61	0.00	20.59	7.50	21.20	7.50	272.95
YOR385W	*YOR385w*	1.02	1.37	1.59	1.96	2.09	2.23	0.21	0.16	12.99	11.95	13.20	12.12	277.47
YOR386W	*PHR1*	0.99	1.34	1.58	1.99	2.12	2.27	0.08	0.05	4.41	5.06	4.49	5.11	271.53
YPL001W	*HAT1*	0.91	1.13	1.24	1.67	1.84	2.04	13.07	5.34	55.27	32.43	68.35	37.77	319.47
YPL002C	*SNF8*	0.89	1.14	1.24	1.49	1.58	1.76	20.95	10.66	72.15	59.50	93.11	70.16	369.01
YPL003W	*ULA1*	0.92	1.24	1.35	1.69	1.81	2.02	9.95	4.78	48.74	28.14	58.69	32.92	314.19
YPL004C	*LSP1*	0.98	1.24	1.47	1.91	2.09	2.22	0.92	1.50	17.15	27.57	18.07	29.07	265.39
YPL005W	*AEP3*	0.83	0.97	0.97	1.34	1.54	1.76	7.75	6.82	44.28	36.16	52.03	42.99	244.54
YPL006W	*NCR1*	0.93	1.33	1.46	1.79	1.95	2.12	3.21	3.47	4.18	3.91	7.38	7.39	253.80
YPL008W	*CHL1*	0.89	1.13	1.17	1.63	1.55	1.78	7.52	8.67	44.68	44.68	52.20	53.35	288.95
YPL009C	*YPL009c*	1.14	1.76	2.01	2.19	2.29	2.31	3.97	4.31	25.47	24.62	29.44	28.93	286.93
YPL013C	*MRPS16*	1.05	1.39	1.59	2.05	2.18	2.27	5.59	5.41	38.28	33.33	43.88	38.74	235.85
YPL014W	*YPL014w*	0.94	1.26	1.36	1.70	1.88	2.11	3.21	3.33	6.98	3.72	10.18	7.05	254.96
YPL015C	*HST2*	0.85	1.08	1.19	1.57	1.72	1.89	3.23	3.30	13.80	5.37	17.03	8.67	275.38
YPL017C	*IRC15*	0.87	0.96	1.01	1.27	1.51	1.78	11.63	9.36	66.09	59.46	77.71	68.81	288.92
YPL018W	*CTF19*	0.85	1.00	0.98	1.14	1.30	1.53	24.49	14.39	74.03	62.35	98.53	76.74	326.31
YPL019C	*VTC3*	0.89	1.16	1.28	1.65	1.80	1.98	14.95	5.74	58.16	34.89	73.11	40.63	324.93
YPL021W	*ECM23*	0.96	1.28	1.45	1.88	2.03	2.20	13.78	5.82	56.67	34.17	70.46	39.99	320.13
YPL022W	*RAD1*	0.90	1.21	1.34	1.74	1.92	2.12	7.34	3.79	42.30	19.79	49.64	23.58	308.82
YPL023C	*MET12*	0.95	1.31	1.48	1.87	2.02	2.20	4.96	3.97	32.99	21.91	37.95	25.88	295.28
YPL024W	*RMI1*	0.93	1.11	1.28	1.65	1.84	2.00	15.37	9.13	74.14	45.79	89.51	54.91	321.73
YPL025C	*YPL025c*	0.92	1.24	1.39	1.79	1.97	2.17	3.16	3.38	10.65	10.96	13.80	14.34	269.01
YPL026C	*SKS1*	0.93	1.26	1.36	1.67	1.78	1.93	4.77	9.14	32.56	45.97	37.33	55.10	278.32
YPL027W	*SMA1*	0.94	1.19	1.42	1.84	2.02	2.17	4.08	6.04	39.13	41.51	43.21	47.55	289.57
YPL029W	*SUV3*	0.90	1.28	1.31	1.49	1.85	2.01	25.64	14.68	84.82	68.35	110.47	83.04	267.61
YPL030W	*TRM44*	0.92	1.25	1.45	1.91	2.16	2.27	4.37	5.41	26.86	31.75	31.23	37.16	275.65
YPL031C	*PHO85*	0.93	1.07	1.18	1.59	1.78	1.72	32.53	18.82	101.54	64.93	134.06	83.75	416.11
YPL032C	*SVL3*	0.87	1.12	1.21	1.54	1.70	1.88	3.44	4.37	16.11	24.76	19.55	29.13	262.45
YPL033C	*SRL4*	0.86	1.11	1.24	1.66	1.86	2.05	3.09	3.20	6.41	2.98	9.50	6.18	250.96
YPL034W	*YPL034w*	0.91	1.12	1.32	1.72	1.90	2.04	5.83	6.83	46.21	45.07	52.04	51.90	286.88
YPL035C	*YPL035c*	0.84	1.07	1.17	1.56	1.71	1.89	3.45	3.50	18.03	6.23	21.48	9.73	263.91
YPL036W	*PMA2*	0.84	0.94	1.03	1.38	1.58	1.70	6.01	3.49	46.58	36.11	52.59	39.60	289.92
YPL037C	*EGD1*	0.91	1.15	1.24	1.58	1.74	1.91	10.39	6.11	46.03	33.09	56.42	39.20	316.82
YPL038W	*MET31*	0.91	1.12	1.22	1.63	1.80	1.99	11.57	7.63	51.78	41.15	63.35	48.77	320.54
YPL038W-A	*YPL038w-a*	0.92	1.17	1.34	1.75	2.01	2.12	15.85	6.86	67.16	36.01	83.01	42.87	322.16
YPL039W	*YPL039w*	0.94	1.31	1.48	1.87	2.02	2.19	12.44	6.17	51.10	36.56	63.54	42.73	311.14
YPL040C	*ISM1*	0.94	1.30	1.46	1.86	2.00	2.17	5.22	6.83	47.33	38.27	52.55	45.10	301.09
YPL041C	*YPL041c*	0.86	1.11	1.22	1.65	1.79	1.99	4.98	11.26	31.93	49.31	36.90	60.57	267.94
YPL042C	*SSN3*	0.92	1.07	1.04	1.15	1.27	1.46	26.83	25.06	70.18	76.25	97.02	101.32	309.87
YPL045W	*VPS16*	0.91	0.97	1.00	0.91	0.91	0.87	120.38	127.36	140.21	113.43	260.59	240.79	382.12
YPL046C	*ELC1*	0.87	1.23	1.60	1.74	1.91	2.06	3.09	3.13	4.88	6.06	7.97	9.19	240.20
YPL047W	*SGF11*	0.92	1.23	1.50	1.57	1.78	2.03	3.01	4.37	6.74	23.77	9.75	28.14	242.18
YPL048W	*CAM1*	0.89	1.15	1.23	1.53	1.72	1.92	3.10	3.45	12.94	13.32	16.04	16.77	254.44
YPL049C	*DIG1*	0.86	1.05	1.09	1.47	1.66	1.85	7.99	4.66	41.55	29.06	49.54	33.73	273.50
YPL050C	*MNN9*	0.93	1.12	1.29	1.65	1.86	2.00	3.69	1.32	41.04	18.55	44.72	19.86	287.66
YPL051W	*ARL3*	0.86	1.09	1.17	1.54	1.74	1.93	3.03	3.47	5.17	2.67	8.20	6.14	254.53
YPL052W	*OAZ1*	0.88	1.13	1.25	1.69	1.85	2.02	4.85	3.16	32.01	11.81	36.86	14.97	283.09
YPL053C	*KTR6*	0.87	1.08	1.17	1.53	1.68	1.85	6.72	8.71	41.46	44.40	48.18	53.11	287.60
YPL054W	*LEE1*	0.95	1.22	1.32	1.75	1.94	2.14	10.62	11.28	51.21	48.60	61.83	59.89	307.51
YPL055C	*LGE1*	0.89	1.11	1.18	1.60	1.79	2.01	7.48	8.62	46.95	46.19	54.43	54.82	284.13
YPL056C	*YPL056c*	0.90	1.19	1.31	1.70	1.87	2.06	4.46	8.19	31.59	40.98	36.05	49.17	283.11
YPL057C	*SUR1*	0.85	1.18	1.31	1.66	1.81	1.98	4.05	8.23	28.02	41.37	32.06	49.60	266.65
YPL058C	*PDR12*	0.87	1.14	1.25	1.63	1.82	2.01	3.07	3.98	8.65	22.68	11.72	26.66	265.68
YPL059W	*GRX5*	0.96	1.05	1.07	1.00	1.02	1.01	121.95	118.49	147.53	111.99	269.47	230.49	378.20
YPL060W	*LPE10*	0.87	1.20	1.36	1.71	1.81	1.84	3.28	3.36	16.41	21.41	19.70	24.77	265.89
YPL061W	*ALD6*	1.07	1.48	1.61	1.98	2.15	2.32	5.20	11.09	43.25	56.15	48.46	67.23	234.42
YPL062W	*YPL062w*	0.83	1.06	1.15	1.57	1.78	1.98	3.58	3.63	31.56	33.73	35.14	37.36	222.52
YPL064C	*CWC27*	0.85	1.12	1.29	1.74	1.90	2.07	3.14	2.82	15.78	4.18	18.92	7.00	266.75
YPL065W	*VPS28*	0.85	1.09	1.17	1.45	1.58	1.76	10.92	3.48	56.22	35.85	67.14	39.33	344.92
YPL066W	*YPL066w*	0.85	1.07	1.17	1.66	1.82	2.00	6.37	2.87	34.31	12.03	40.68	14.90	279.10
YPL067C	*YPL067c*	1.07	1.29	1.38	1.87	2.07	2.21	29.78	19.50	83.78	76.12	113.56	95.62	332.08
YPL068C	*YPL068c*	1.06	1.28	1.42	1.94	2.14	2.30	15.69	9.68	69.72	60.95	85.41	70.63	313.90
YPL069C		1.13	1.43	1.60	2.03	2.16	2.29	8.93	3.40	55.35	37.86	64.28	41.26	319.11
YPL069C	*BTS1*	0.88	1.18	1.28	1.71	1.91	2.05	5.27	1.23	42.22	16.17	47.49	17.40	297.88
YPL070W	*MUK1*	1.14	1.47	1.70	2.14	2.29	2.39	10.42	2.99	61.27	39.72	71.69	42.71	302.01
YPL071C	*YPL071c*	1.16	1.37	1.43	1.91	2.14	2.33	11.17	3.05	63.22	38.40	74.39	41.45	302.90
YPL072W	*UBP16*	1.04	1.29	1.45	1.90	2.08	2.24	1.72	1.29	28.85	19.66	30.57	20.95	285.36
YPL073C	*YPL073c*	1.00	1.23	1.35	1.83	2.01	2.18	6.72	3.38	52.28	39.68	59.00	43.06	290.13
YPL074W	*YTA6*	1.08	1.39	1.60	2.08	2.25	2.38	3.55	1.49	38.93	21.38	42.49	22.87	291.14
YPL075W	*GCR1*	0.95	1.16	1.16	1.13	1.28	1.65	71.61	52.76	112.25	79.16	183.86	131.92	365.42
YPL077C	*YPL077c*	1.03	1.38	1.56	1.98	2.17	2.30	1.03	0.97	4.37	1.84	5.40	2.81	275.80
YPL078C	*ATP4*	1.02	1.24	1.33	1.78	1.98	2.15	9.39	3.23	60.72	39.11	70.11	42.34	294.31
YPL078C	*ATP4*	0.89	1.03	1.16	1.60	1.81	1.94	3.22	2.15	35.63	28.39	38.85	30.55	277.01
YPL079W	*RPL21b*	1.08	1.28	1.33	1.68	1.90	2.08	20.92	5.58	73.49	53.96	94.41	59.54	297.76
YPL080C	*YPL080c*	1.16	1.50	1.62	2.07	2.24	2.36	1.56	1.43	27.23	17.47	28.79	18.90	283.78
YPL081W	*RPS9a*	1.04	1.26	1.40	1.84	2.03	2.21	12.70	7.77	63.83	55.19	76.53	62.96	313.32
YPL084W	*BRO1*	0.92	1.39	1.52	1.76	1.93	2.05	2.75	1.32	57.10	27.04	59.85	28.36	237.78
YPL086C	*ELP3*	1.10	1.47	1.62	2.07	2.24	2.39	1.98	0.95	28.50	8.84	30.48	9.79	269.20
YPL087W	*YDC1*	1.07	1.37	1.49	1.92	2.08	2.25	1.43	0.96	20.14	7.83	21.58	8.79	283.08
YPL088W	*YPL088w*	1.07	1.39	1.64	2.04	2.19	2.32	1.75	1.17	23.22	15.49	24.97	16.66	283.40
YPL089C	*RLM1*	1.01	1.25	1.34	1.74	1.92	2.13	1.52	1.07	21.12	10.13	22.64	11.20	262.33
YPL090C	*RPS6a*	1.07	1.32	1.46	1.95	2.16	2.34	1.59	0.94	30.54	8.03	32.13	8.98	240.16
YPL091W	*GLR1*	1.02	1.34	1.53	2.01	2.18	2.32	5.35	2.18	45.40	27.93	50.74	30.11	296.23
YPL092W	*SSU1*	0.91	1.18	1.33	1.80	2.04	2.21	2.30	0.01	26.60	5.09	28.90	5.11	308.24
YPL095C	*EEB1*	0.95	1.23	1.43	1.95	2.13	2.26	16.56	5.41	66.04	45.78	82.60	51.19	318.10
YPL096C-A	*ERI1*	0.92	1.12	1.22	1.62	1.90	2.08	3.70	1.21	39.62	15.22	43.32	16.42	286.05
YPL096W	*PNG1*	0.89	1.09	1.27	1.84	2.06	2.20	1.23	0.04	29.54	13.51	30.77	13.55	295.99
YPL097W	*MSY1*	0.92	1.00	0.97	0.99	1.03	1.00	125.38	142.12	125.57	141.56	250.95	283.68	528.33
YPL098C	*MGR2*	0.98	1.26	1.48	1.98	2.18	2.32	1.08	0.61	28.75	15.71	29.83	16.32	304.83
YPL099C	*AIM43*	0.91	1.11	1.27	1.84	2.04	2.18	4.71	3.40	47.56	39.65	52.27	43.05	298.90
YPL100W	*ATG21*	0.92	1.14	1.30	1.83	2.06	2.21	0.22	0.22	19.98	13.37	20.21	13.59	291.27
YPL101W	*ELP4*	0.92	1.10	1.25	1.86	2.06	2.26	7.37	0.72	51.20	18.01	58.57	18.72	309.24
YPL102C	*YPL102c*	0.90	1.02	1.09	1.68	1.98	2.16	0.66	1.68	23.30	10.40	23.96	12.08	264.63
YPL103C	*FMP30*	0.94	1.27	1.45	1.93	2.08	2.28	-0.04	0.23	1.54	-0.29	1.49	-0.06	303.93
YPL104W	*MSD1*	0.95	1.17	1.18	1.04	1.05	1.01	126.45	121.83	127.55	123.82	254.00	245.65	531.54
YPL105C	*SYH1*	0.91	1.25	1.49	1.95	2.08	2.25	3.20	0.47	37.46	14.63	40.66	15.10	289.54
YPL106C	*SSE1*	0.91	1.05	1.10	1.65	1.91	2.14	7.58	6.86	51.76	46.98	59.34	53.84	278.77
YPL107W	*YPL107w*	0.96	1.30	1.54	2.04	2.18	2.33	-0.05	-0.09	1.67	0.17	1.62	0.08	249.45
YPL108W	*YPL108w*	0.93	1.19	1.37	1.88	2.08	2.26	-0.07	-0.05	0.61	1.72	0.53	1.67	254.47
YPL109C	*YPL109c*	0.93	1.25	1.51	2.01	2.13	2.29	0.12	6.29	15.01	43.67	15.13	49.96	272.59
YPL110C	*GDE1*	0.96	1.22	1.41	1.94	2.12	2.30	-0.13	0.22	1.05	9.00	0.92	9.23	264.61
YPL111W	*CAR1*	0.95	1.19	1.36	1.82	2.03	2.24	2.46	-0.04	3.48	7.48	5.94	7.44	225.10
YPL112C	*PEX25*	0.90	1.11	1.28	1.74	1.90	2.07	14.07	8.50	63.11	52.84	77.18	61.34	325.51
YPL113C	*YPL113c*	1.01	1.37	1.59	2.10	2.22	2.38	0.91	0.22	20.65	3.94	21.56	4.16	292.83
YPL114W	*YPL114w*	0.88	1.11	1.27	1.74	1.93	2.14	0.14	0.07	2.74	-0.56	2.88	-0.50	278.42
YPL115C	*BEM3*	1.01	1.32	1.51	2.05	2.20	2.35	6.14	0.74	48.26	20.26	54.41	20.99	295.77
YPL116W	*HOS3*	0.91	1.18	1.33	1.80	1.96	2.16	0.04	-0.01	1.79	-0.72	1.83	-0.73	278.05
YPL118W	*MRP51*	0.83	1.02	1.02	0.82	0.81	0.81	122.52	119.89	128.83	125.42	251.35	245.32	527.91
YPL118W	*MRP51*	0.82	1.01	0.99	0.82	0.82	0.81	122.30	120.59	127.27	121.69	249.57	242.28	538.89
YPL119C	*DBP1*	0.97	1.35	1.59	2.02	2.02	2.14	0.15	-0.12	5.54	-0.65	5.69	-0.78	283.77
YPL119C-A	*YPL119c-a*	0.91	1.19	1.29	1.67	1.91	2.08	4.82	1.03	46.28	15.58	51.11	16.62	283.21
YPL120W	*VPS30*	0.96	1.20	1.32	1.61	1.74	1.91	2.99	-0.09	40.67	9.46	43.66	9.37	331.18
YPL121C	*MEI5*	1.01	1.37	1.60	2.05	2.19	2.33	1.05	-0.12	23.07	3.13	24.12	3.01	290.64
YPL123C	*RNY1*	1.00	1.24	1.40	1.90	2.09	2.31	0.09	-0.03	10.60	1.38	10.69	1.35	287.45
YPL125W	*KAP120*	0.94	1.20	1.39	1.88	2.06	2.21	0.58	-0.04	18.63	2.57	19.21	2.53	290.56

ORF.name	Strain	Optical density at 600 nm at regular intervals (h)						GLUCOSE		FRUCTOSE		TOTAL SUGARS (g/l)		TOTAL AMINO ACIDS (mg/L)
		0	26	33	48	59	78	102 h	118 h	102 h	118 h	102 h	118 h	102 h
YPL127C	HHO1	0.99	1.24	1.40	1.90	2.07	2.25	9.32	1.92	56.47	32.58	65.79	34.50	330.16
YPL129W	TAF14	0.96	1.06	1.03	1.06	1.09	1.18	110.25	95.44	129.45	120.48	239.70	215.92	458.89
YPL130W	SPO19	0.89	1.06	1.15	1.63	1.83	2.06	0.33	0.07	18.69	3.22	19.02	3.30	313.89
YPL132W	COX11	0.87	1.16	1.21	1.39	1.69	1.90	14.12	5.94	61.35	41.51	75.47	47.46	277.08
YPL133C	RDS2	0.90	1.14	1.32	1.87	2.02	2.18	3.96	0.94	41.96	22.89	45.93	23.83	297.66
YPL134C	ODC1	0.99	1.50	1.71	2.04	2.17	2.29	7.62	3.72	37.63	17.12	45.24	20.83	295.89
YPL135W	ISU1	1.07	1.40	1.58	2.08	2.23	2.40	0.12	0.19	4.41	-0.09	4.53	0.10	274.83
YPL136W	YPL136w	0.98	1.27	1.45	1.91	2.07	2.24	2.32	0.20	34.97	9.93	37.28	10.13	300.62
YPL137C	GIP3	0.93	1.14	1.36	1.80	1.97	1.99	6.08	0.91	44.97	6.61	51.05	7.52	273.45
YPL138C	SPP1	0.98	1.30	1.53	1.98	2.10	2.25	4.71	0.71	43.59	19.09	48.30	19.80	285.36
YPL139C	UME1	1.01	1.40	1.61	2.00	2.14	2.28	5.56	0.91	52.91	31.35	58.47	32.26	293.10
YPL140C	MKK2	0.95	1.33	1.51	2.02	2.17	2.36	0.30	0.05	9.28	-0.62	9.57	-0.57	277.63
YPL141C	FRK1	1.01	1.41	1.57	1.98	2.09	2.27	0.05	0.07	0.14	-0.97	0.18	-0.91	292.14
YPL144W	POC4	1.13	1.52	1.73	2.14	2.24	2.34	24.43	18.51	73.66	65.81	98.09	84.33	335.71
YPL145C	KES1	1.00	1.37	1.56	2.03	2.17	2.29	2.44	0.09	18.18	3.88	20.62	3.96	299.62
YPL147W	PXA1	1.02	1.43	1.65	2.13	2.27	2.41	1.30	0.20	14.83	0.41	16.13	0.61	288.92
YPL148C	PPT2	0.94	1.16	1.39	1.88	2.10	2.27	1.18	0.66	9.39	1.08	10.57	1.75	268.10
YPL149W	ATG5	1.08	1.26	1.34	1.79	2.00	2.19	14.66	3.47	71.61	39.10	86.27	42.57	340.77
YPL150W	YPL150w	0.89	1.10	1.25	1.75	1.92	2.12	4.08	0.10	39.42	9.58	43.51	9.68	297.89
YPL152W	RRD2	0.94	1.22	1.37	1.85	2.03	2.23	0.05	0.09	1.73	-0.03	1.79	0.05	282.53
YPL152W-A	YPL152w-a	0.95	1.25	1.39	1.78	2.01	2.14	5.71	1.20	48.19	17.42	53.90	18.62	283.76
YPL154C	PEP4	0.98	1.14	1.25	1.81	2.04	2.23	6.94	0.75	58.47	26.86	65.40	27.61	298.61
YPL155C	KIP2	0.97	1.24	1.42	1.97	2.15	2.34	1.23	0.16	27.62	6.84	28.85	7.01	291.69
YPL156C	PRM4	0.95	1.18	1.32	1.84	2.01	2.21	16.39	6.83	69.69	46.98	86.08	53.81	324.92
YPL157W	TGS1	0.95	1.33	1.55	2.00	2.10	2.25	18.82	9.14	74.83	55.47	93.66	64.61	309.56
YPL158C	AIM44	0.99	1.15	1.10	1.19	1.36	1.46	26.64	36.73	78.14	82.74	104.78	119.47	324.61
YPL159C	PET20	1.01	1.35	1.53	2.00	2.15	2.32	4.49	0.14	40.55	8.93	45.04	9.07	300.18
YPL161C	BEM4	1.03	1.43	1.67	2.11	2.22	2.35	7.16	2.41	48.37	32.85	55.53	35.27	299.16
YPL162C	YPL162c	1.09	1.52	1.72	2.22	2.36	2.49	0.47	0.16	18.59	2.84	19.05	3.01	301.67
YPL163C	SVS1	1.02	1.42	1.62	2.09	2.23	2.36	0.74	0.02	16.40	3.79	17.14	3.80	299.25
YPL164C	MLH3	0.98	1.38	1.57	2.08	2.22	2.37	0.12	-0.01	7.79	0.29	7.90	0.28	285.04
YPL165C	SET6	0.91	1.19	1.31	1.65	1.83	1.98	15.87	3.35	68.60	29.37	84.47	32.71	300.38
YPL165C	SET6	0.84	1.13	1.26	1.69	1.86	1.98	18.90	8.08	70.67	47.94	89.57	56.02	308.41
YPL166W	ATG29	0.90	1.08	1.19	1.69	1.87	2.10	6.05	1.29	53.17	32.05	59.23	33.34	299.22
YPL167C	REV3	0.91	1.14	1.27	1.78	1.98	2.20	0.27	0.13	2.05	-0.17	2.32	-0.03	271.03
YPL168W	YPL168w	1.04	1.36	1.54	2.07	2.19	2.34	11.66	3.64	56.67	34.30	68.34	37.94	320.21
YPL170W	DAP1	0.99	1.32	1.52	2.02	2.14	2.30	2.10	0.55	32.84	17.17	34.93	17.72	298.26
YPL171C	OYE3	0.97	1.30	1.51	2.04	2.19	2.35	0.62	0.19	21.78	4.41	22.40	4.60	293.10
YPL172C	COX10	0.85	1.12	1.10	0.92	0.92	0.92	122.89	123.00	125.63	123.90	248.52	246.90	533.25
YPL173W	MRPL40	0.93	1.14	1.13	1.01	1.02	0.98	123.50	121.26	132.82	129.59	256.33	250.85	532.30
YPL174C	NIP100	1.03	1.34	1.47	1.82	1.97	2.12	16.19	10.88	67.59	58.16	83.78	69.04	292.60
YPL176C	TRE1	1.03	1.42	1.63	2.08	2.21	2.35	11.43	3.77	57.05	39.64	68.48	43.40	324.97
YPL177C	CUP9	0.96	1.33	1.52	1.97	2.10	2.25	5.83	0.51	40.70	18.62	46.53	19.13	303.59
YPL178W	CBC2	1.01	1.13	1.08	1.29	1.61	1.92	45.14	26.98	93.87	74.79	139.02	101.77	300.62
YPL179W	PPQ1	1.04	1.50	1.70	2.17	2.29	2.42	-0.28	-0.30	3.86	0.27	3.58	-0.03	278.37
YPL180W	TCO89	0.91	1.15	1.29	1.73	1.88	2.05	28.57	24.99	77.55	72.43	106.12	97.42	420.88
YPL181W	CTI6	1.04	1.33	1.46	1.98	2.16	2.36	0.24	0.17	17.41	8.18	17.66	8.35	296.34
YPL182C	YPL182c	0.87	1.11	1.23	1.68	1.82	2.05	0.24	0.16	11.48	4.27	11.72	4.43	315.88
YPL183C	RTT10	0.92	1.09	1.26	1.78	1.98	2.14	14.60	12.15	69.53	58.67	84.13	70.82	312.55
YPL183W	Unknown	0.91	1.30	1.47	1.97	2.22	2.16	4.77	1.26	42.92	13.48	47.69	14.74	269.12
YPL183W-A	RTC6	0.89	1.02	1.18	1.67	1.90	2.07	1.59	1.16	27.15	11.94	28.74	13.10	281.00
YPL184C	MRN1	0.97	1.23	1.40	1.82	2.02	2.20	1.63	0.19	24.24	5.06	25.87	5.26	310.85
YPL185W	YPL185w	1.00	1.44	1.66	2.06	2.18	2.31	6.86	3.74	47.55	35.47	54.40	39.21	306.17
YPL186C	UIP4	0.89	1.16	1.37	1.92	2.09	2.26	3.30	0.06	29.51	1.72	32.81	1.78	301.54
YPL187W	MF(ALPHA)1	0.94	1.17	1.29	1.72	1.89	2.11	0.08	0.04	6.31	-0.20	6.39	-0.16	294.03
YPL188W	POS5	0.91	1.26	1.38	1.66	1.85	1.95	24.62	15.11	78.10	61.53	102.72	76.64	355.59
YPL189C-A	COA2	0.91	1.16	1.24	1.67	1.95	2.13	6.13	1.77	50.66	20.62	56.79	22.39	278.22
YPL189W	GUP2	1.00	1.38	1.62	2.07	2.23	2.19	0.97	0.17	20.84	8.12	21.81	8.29	284.54
YPL189W	GUP2	0.94	1.12	1.30	1.87	2.08	2.28	1.06	0.84	13.34	2.70	14.40	3.54	273.69
YPL191C	YPL191c	1.01	1.42	1.67	2.09	2.22	2.37	0.97	0.15	23.44	8.29	24.40	8.43	286.19
YPL192C	PRM3	1.07	1.51	1.73	2.15	2.29	2.42	1.39	0.24	24.44	12.12	25.83	12.36	294.32
YPL193W	RSA1	1.05	1.25	1.28	1.77	2.00	2.26	4.30	2.00	47.82	24.26	52.12	26.26	321.16
YPL194W	DDC1	0.91	1.14	1.30	1.78	1.97	2.19	3.39	2.38	38.15	29.73	41.54	32.12	297.81
YPL194W	DDC1	0.89	1.16	1.25	1.60	1.79	1.95	4.32	3.12	32.33	15.58	36.65	18.70	316.63
YPL195W	APL5	0.90	1.14	1.28	1.78	1.94	2.13	17.29	10.76	67.65	58.53	84.95	69.29	338.06
YPL196W	OXR1	0.96	1.25	1.44	1.97	2.12	2.28	1.74	0.27	31.47	6.69	33.21	6.96	290.42
YPL197C	YPL197c	0.94	1.22	1.40	1.86	2.04	2.23	0.24	0.13	11.59	0.71	11.83	0.84	280.18
YPL198W	RPL7b	0.94	1.22	1.39	1.86	2.02	2.20	1.84	0.15	27.21	6.07	29.05	6.21	296.07
YPL199C	YPL199c	0.95	1.30	1.49	1.91	2.04	2.18	11.38	5.95	56.31	43.85	67.69	49.80	321.46
YPL200W	CSM4	1.00	1.30	1.50	1.98	2.16	2.31	4.41	0.58	38.22	14.21	42.63	14.78	295.20
YPL201C	YIG1	1.02	1.42	1.57	1.96	2.12	2.30	0.75	0.10	18.13	2.95	18.88	3.05	299.82
YPL202C	AFT2	0.90	1.21	1.56	1.62	1.80	1.95	0.06	0.05	1.14	-0.79	1.20	-0.74	272.54
YPL203W	TPK2	1.00	1.49	1.72	2.14	2.25	2.38	3.34	0.84	33.34	18.05	36.68	18.89	296.82
YPL205C	YPL205c	1.03	1.28	1.42	1.91	2.11	2.28	26.83	12.11	79.15	56.34	105.99	68.44	343.93
YPL206C	PGC1	1.07	1.52	1.74	2.15	2.28	2.41	-0.02	0.07	5.37	0.43	5.35	0.50	320.91
YPL207W	TYW1	0.98	1.25	1.48	1.97	2.11	2.28	2.01	1.93	36.31	31.86	38.32	33.79	293.25
YPL208W	RKM1	1.01	1.39	1.60	2.06	2.19	2.34	4.12	4.18	40.96	39.50	45.08	43.68	298.30
YPL212C	PUS1	1.03	1.45	1.70	2.17	2.29	2.44	0.10	-0.18	6.08	3.24	6.18	3.06	268.07
YPL213W	LEA1	0.96	1.29	1.49	1.95	2.11	2.26	7.89	6.21	53.25	44.84	61.14	51.05	305.62
YPL214C	THI6	1.08	1.45	1.64	2.03	2.19	2.34	-0.21	-0.18	5.47	2.83	5.27	2.65	267.97
YPL215W	CBP3	1.01	1.38	1.62	2.02	2.15	2.30	6.53	4.57	46.31	40.03	52.85	44.60	315.80
YPL216W	YPL216w	0.86	1.07	1.22	1.85	2.04	2.23	0.33	-0.10	13.32	3.53	13.66	3.43	286.14
YPL219W	PCL8	1.06	1.46	1.67	2.12	2.26	2.41	0.22	-0.19	14.49	4.30	14.71	4.11	290.66
YPL220W	RPL1a	0.97	1.39	1.59	2.06	2.18	2.33	0.36	0.10	13.38	2.77	13.75	2.86	290.64
YPL221W	FLC1	1.04	1.52	1.73	2.17	2.28	2.42	-0.16	0.05	2.51	-0.82	2.34	-0.77	276.58
YPL222W	FMP40	1.04	1.42	1.63	2.04	2.20	2.34	0.49	-0.05	14.81	3.73	15.30	3.68	296.01
YPL223C	GRE1	0.91	1.12	1.32	1.89	2.06	2.22	15.56	0.43	71.03	18.01	86.59	18.44	322.28
YPL224C	MMT2	0.92	1.07	1.24	1.71	1.90	2.08	10.36	2.35	57.78	29.82	68.14	32.16	317.85
YPL225W	YPL225w	0.95	1.14	1.27	1.83	2.01	2.20	18.85	0.08	78.15	11.45	97.00	11.53	338.23
YPL226W	NEW1	0.98	1.25	1.42	1.84	1.98	2.14	5.66	0.01	46.80	3.76	52.46	3.76	299.73
YPL227C	ALG5	0.97	1.22	1.39	1.87	2.02	2.19	3.08	-0.08	41.49	4.36	44.57	4.29	292.53
YPL229W	YPL229w	0.93	1.17	1.37	1.86	2.02	2.19	5.30	0.02	46.78	6.30	52.08	6.31	297.36
YPL230W	USV1	0.94	1.20	1.36	1.82	2.00	2.21	-0.18	-0.12	0.03	-0.85	-0.15	-0.97	264.78
YPL232W	SSO1	0.82	1.18	1.43	1.88	2.02	2.20	0.00	-0.15	5.46	-0.50	5.46	-0.65	260.85
YPL234C	TFP3	1.01	1.19	1.20	1.38	1.59	1.83	38.57	17.19	94.03	80.22	132.59	97.41	332.15
YPL234C	TFP3	0.94	1.14	1.17	1.30	1.63	1.89	37.94	26.98	91.05	90.61	128.99	117.60	322.18
YPL236C	YPL236c	0.94	1.20	1.39	1.86	2.02	2.19	1.08	-0.07	27.79	5.70	28.86	5.63	282.88
YPL239W	YAR1	0.97	1.16	1.31	1.83	2.03	2.21	13.65	11.40	66.04	68.95	79.69	80.34	308.78
YPL240C	HSP82	0.98	1.23	1.46	1.94	2.09	2.25	4.81	0.60	45.29	22.33	50.10	22.93	303.46
YPL241C	CIN2	1.02	1.35	1.60	2.08	2.20	2.33	5.03	0.03	47.88	4.50	52.91	4.53	297.58
YPL244C	HUT1	0.97	1.28	1.51	2.00	2.16	2.32	0.07	0.05	1.52	-0.81	1.59	-0.75	268.41
YPL245W	YPL245w	0.99	1.31	1.53	2.01	2.15	2.29	1.15	-0.03	26.53	4.74	27.68	4.71	280.53
YPL246C	RBD2	0.95	1.23	1.43	1.84	1.99	2.16	1.12	-0.02	27.57	2.77	28.70	2.75	296.42
YPL247C	YPL247c	0.96	1.26	1.49	1.98	2.14	2.30	0.64	-0.04	20.73	1.87	21.37	1.83	269.96
YPL248C	GAL4	0.93	1.23	1.45	1.93	2.09	2.25	-0.07	1.50	3.21	1.32	3.14	2.82	273.44
YPL249C	GYP5	0.87	1.25	1.52	1.94	2.06	2.21	5.14	-0.15	40.09	2.55	45.23	2.40	301.84
YPL249C-A	RPL36b	0.88	1.11	1.15	1.32	1.62	1.84	54.43	40.55	100.34	69.46	154.77	110.01	373.40
YPL250C	ICY2	0.99	1.28	1.49	1.93	2.02	2.11	2.98	-0.10	41.51	6.55	44.49	6.45	286.69
YPL253C	VIK1	0.96	1.22	1.41	1.82	1.95	2.12	5.03	1.04	46.27	8.88	51.29	9.92	306.79
YPL254W	HFI1	0.93	1.08	1.10	1.02	1.14	1.31	63.29	54.68	104.49	117.25	167.79	171.93	377.69
YPL254W	HFI1	0.83	1.05	1.03	0.92	1.08	1.18	62.02	40.61	103.27	89.16	165.29	129.78	393.85
YPL256C	CLN2	0.98	1.22	1.39	1.89	2.10	2.29	1.11	0.22	28.14	6.95	29.24	7.17	303.95
YPL257W	YPL257w	1.00	1.25	1.45	1.90	2.08	2.24	6.79	0.07	45.37	5.98	52.16	6.04	317.70
YPL258C	THI21	0.97	1.23	1.44	1.97	2.14	2.33	0.03	0.01	4.21	-0.53	4.24	-0.52	267.47
YPL259C	APM1	0.95	1.27	1.51	2.02	2.15	2.29	2.14	0.11	34.36	3.76	36.50	3.87	300.25
YPL260W	YPL260w	1.01	1.34	1.57	2.05	2.21	2.35	1.41	0.09	28.65	0.44	30.06	0.53	298.46
YPL261C	YPL261c	0.99	1.36	1.65	2.07	2.18	2.29	4.79	0.29	43.50	8.90	48.29	9.18	268.17
YPL262W	FUM1	1.00	1.45	1.72	2.15	2.26	2.40	0.18	1.62	10.01	2.22	10.18	3.84	272.45
YPL263C	KEL3	1.00	1.37	1.61	2.07	2.21	2.37	0.04	0.08	7.47	-0.87	7.51	-0.79	267.03
YPL264C	YPL264c	0.81	1.15	1.41	1.85	1.98	2.14	10.00	0.07	59.94	3.53	69.95	3.59	314.96
YPL265W	DIP5	1.00	1.34	1.57	2.02	2.16	2.31	2.58	-0.02	35.36	0.70	37.95	0.67	304.25
YPL267W	ACM1	0.96	1.23	1.44	1.92	2.07	2.23	9.79	0.22	53.92	7.89	63.70	8.12	321.13
YPL268W	PLC1	0.92	1.13	1.26	1.72	1.93	2.05	4.80	0.72	47.63	3.87	52.43	4.60	314.26
YPL269W	KAR9	1.03	1.38	1.63	2.06	2.22	2.37	5.10	0.05	41.77	5.89	46.87	5.94	304.51
YPL270W	MDL2	1.02	1.33	1.56	2.01	2.17	2.34	6.98	0.01	47.67	1.46	54.65	1.47	341.91
YPL271W	ATP15	0.86	1.03	1.00	0.82	0.83	0.81	110.63	100.62	122.52	119.76	233.15	220.37	469.78
YPL272C	YPL272c	0.97	1.28	1.51	2.03	2.16	2.31	5.55	0.01	46.95	6.81	52.50	6.82	299.13
YPL273W	SAM4	0.95	1.25	1.46	1.94	2.07	2.22	6.64	0.12	49.52	7.57	56.17	7.69	301.89
YPL274W	SAM3	0.91	1.13	1.30	1.78	1.94	2.12	5.40	0.04	50.07	3.10	55.47	3.14	306.25
YPL277C	YPL277c	0.94	1.26	1.41	1.80	1.97	2.11	6.34	0.90	48.14	12.14	54.47	13.04	289.34
YPR001W	CIT3	0.88	1.13	1.25	1.59	1.77	1.96	11.77	5.38	57.10	32.67	68.88	38.05	317.53
YPR002W	PDH1	0.84	1.08	1.20	1.63	1.81	1.99	3.11	3.28	5.61	3.02	8.72	6.29	264.22
YPR003C	YPR003c	0.84	1.05	1.12	1.46	1.60	1.76	4.34	3.28	28.72	7.82	33.07	11.10	279.25
YPR004C	AIM45	0.90	1.13	1.23	1.58	1.74	1.94	3.38	3.17	18.01	5.49	21.39	8.66	267.53

ORF.name	Strain	Optical density at 600 nm at regular intervals (h)						GLUCOSE		FRUCTOSE		TOTAL SUGARS (g/l)		TOTAL AMINO ACIDS (mg/L)
		0	26	33	48	59	78	102 h	118 h	102 h	118 h	102 h	118 h	102 h
YPR005C	*HAL1*	0.89	1.16	1.27	1.58	1.70	1.88	4.18	3.79	26.97	19.53	31.15	23.32	278.99
YPR006C	*ICL2*	0.89	1.30	1.48	1.79	1.83	2.10	16.57	8.86	57.95	43.19	74.52	52.05	345.32
YPR007C	*REC8*	0.96	1.23	1.48	1.93	2.11	2.25	13.87	3.08	61.49	32.46	75.35	35.54	311.83
YPR008W	*HAA1*	0.96	1.29	1.57	1.98	2.14	2.24	14.03	5.89	71.41	53.42	85.44	59.31	309.86
YPR009W	*SUT2*	0.97	1.38	1.52	1.84	1.98	2.10	15.22	7.66	56.26	38.88	71.48	46.53	340.51
YPR011C	*YPR011c*	0.94	1.26	1.49	1.97	2.13	2.23	12.03	2.43	53.51	21.96	65.54	24.39	321.80
YPR012W	*YPR012w*	1.05	1.52	1.67	1.97	2.07	2.19	14.70	8.92	54.29	45.45	68.99	54.37	330.37
YPR013C	*YPR013c*	0.95	1.20	1.43	1.85	2.04	2.17	6.46	1.79	48.86	27.31	55.32	29.09	315.20
YPR014C	*YPR014c*	0.98	1.42	1.57	1.90	2.08	2.23	3.44	3.17	18.88	9.27	22.33	12.44	284.26
YPR015C	*YPR015c*	1.08	1.64	1.85	2.21	2.31	2.41	8.01	6.79	40.18	35.13	48.19	41.92	310.21
YPR017C	*DSS4*	1.03	1.53	1.73	2.07	2.18	2.28	15.82	7.48	55.79	40.23	71.61	47.71	331.91
YPR018W	*RLF2*	1.00	1.49	1.69	2.03	2.17	2.27	14.99	8.59	54.42	40.60	69.41	49.20	330.37
YPR020W	*ATP20*	1.02	1.48	1.67	2.03	2.17	2.28	9.54	4.50	43.43	24.33	52.98	28.83	318.92
YPR021C	*AGC1*	1.03	1.38	1.61	2.02	2.17	2.33	0.35	0.16	16.40	8.59	16.74	8.75	284.97
YPR022C	*YPR022c*	0.85	0.99	1.16	1.58	1.78	1.95	3.62	1.05	37.17	16.23	40.79	17.28	295.05
YPR023C	*EAF3*	0.93	1.10	1.25	1.73	1.98	1.95	6.17	1.10	47.14	18.91	53.31	20.02	316.80
YPR024W	*YME1*	0.93	1.09	1.27	1.68	1.87	2.03	4.08	0.79	42.75	9.90	46.84	10.69	336.94
YPR026W	*ATH1*	0.99	1.22	1.46	1.88	2.08	2.23	2.14	0.79	30.55	7.17	32.69	7.97	282.64
YPR027C	*YPR027c*	1.03	1.49	1.71	2.06	2.19	2.28	15.40	8.02	56.64	41.70	72.04	49.72	335.76
YPR028W	*YOP1*	1.00	1.54	1.77	2.10	2.21	2.30	13.55	6.45	52.75	35.94	66.30	42.39	335.45
YPR029C	*APL4*	1.00	1.48	1.69	2.08	2.23	2.32	15.00	6.47	58.54	34.93	73.54	41.40	333.85
YPR030W	*CSR2*	0.93	1.29	1.51	1.89	2.07	2.18	12.61	5.47	51.54	32.54	64.15	38.01	338.48
YPR031W	*NTO1*	0.93	1.13	1.38	1.81	2.01	2.17	5.32	0.91	42.15	10.63	47.47	11.54	311.43
YPR032W	*SRO7*	0.92	1.35	1.61	1.92	2.06	2.16	8.07	4.22	38.25	23.22	46.31	27.44	309.63
YPR036W	*VMA13*	0.94	1.24	1.38	1.75	1.99	2.15	5.71	4.43	35.79	17.70	41.50	22.13	321.16
YPR037C	*ERV2*	0.98	1.27	1.56	2.01	2.16	2.29	4.48	0.90	41.26	11.17	45.74	12.07	301.78
YPR038W	*YPR038w*	0.93	1.31	1.48	1.82	2.00	2.14	13.64	5.52	52.70	32.92	66.34	38.44	349.05
YPR039W	*YPR039w*	0.91	1.38	1.58	1.95	2.11	2.24	5.38	3.36	29.52	16.29	34.90	19.64	287.35
YPR040W	*TIP41*	0.99	1.40	1.61	1.95	2.11	2.25	4.11	2.86	24.31	7.51	28.41	10.37	293.85
YPR042C	*PUF2*	0.88	1.31	1.49	1.85	2.02	2.17	3.05	2.88	18.67	5.39	21.72	8.26	304.58
YPR043W	*RPL43a*	0.90	1.02	1.12	1.50	1.78	2.02	0.75	0.57	6.29	2.58	7.03	3.14	236.53
YPR044C	*YPR044c*	0.91	1.21	1.25	1.61	1.89	2.13	4.36	2.87	33.01	8.70	37.37	11.58	274.36
YPR045C	*YPR045c*	0.91	1.22	1.27	1.63	1.91	2.14	4.47	3.36	33.50	12.30	37.98	15.66	271.23
YPR046W	*MCM16*	0.90	1.16	1.21	1.50	1.72	1.95	28.83	15.08	69.07	57.52	97.90	72.60	363.85
YPR047W	*MSF1*	1.01	1.24	1.20	1.13	1.14	1.08	102.12	100.56	105.88	106.54	208.00	207.10	529.10
YPR049C	*ATG11*	0.98	1.31	1.35	1.73	1.97	2.15	35.10	26.70	79.64	72.03	114.75	98.72	335.19
YPR050C	*YPR050c*	0.90	1.10	1.32	1.80	2.00	2.14	2.09	1.24	27.45	18.23	29.54	19.47	267.95
YPR051W	*MAK3*	0.95	1.36	1.60	1.96	2.13	2.24	13.65	8.01	53.32	41.51	66.97	49.52	328.88
YPR052C	*NHP6a*	0.92	1.25	1.42	1.82	2.01	2.15	19.08	11.81	57.95	47.18	77.03	58.99	344.84
YPR053C	*YPR053c*	0.95	1.36	1.61	1.96	2.12	2.23	13.78	6.24	51.77	34.07	65.55	40.31	336.37
YPR054W	*SMK1*	0.99	1.34	1.51	1.93	2.12	2.25	25.20	13.27	67.85	52.40	93.05	65.67	365.29
YPR057W	*BRR1*	0.89	1.26	1.41	1.75	1.95	2.11	5.34	3.40	31.54	14.42	36.87	17.82	284.18
YPR058W	*YMC1*	0.97	1.39	1.58	1.97	2.13	2.26	15.59	8.00	51.87	39.38	67.46	47.38	341.93
YPR059C	*YPR059c*	0.90	1.34	1.49	1.84	2.00	2.12	14.60	12.66	53.90	49.93	68.50	62.59	302.72
YPR060C	*ARO7*	0.90	1.19	1.16	1.03	1.03	1.01	120.45	120.23	138.18	135.95	258.63	256.18	527.91
YPR061C	*JID1*	0.91	1.31	1.45	1.79	1.94	2.07	9.71	4.37	45.32	24.90	55.03	29.27	337.76
YPR062W	*FCY1*	0.89	1.35	1.52	1.87	2.02	2.14	17.83	6.24	57.47	39.02	75.30	47.26	350.48
YPR063C	*YPR063c*	0.97	1.44	1.67	2.10	2.26	2.37	19.89	7.90	59.55	37.91	79.44	45.81	355.67
YPR064W	*YPR064w*	0.92	1.08	1.26	1.70	1.94	2.10	2.41	1.71	33.25	26.33	35.66	28.04	293.44
YPR065W	*ROX1*	0.96	1.35	1.47	1.87	2.04	2.17	17.61	9.79	57.05	44.55	74.67	54.34	343.98
YPR066W	*UBA3*	1.00	1.37	1.63	1.98	2.13	2.23	20.39	12.36	62.21	49.26	82.61	61.62	363.67
YPR067W	*ISA2*	0.94	1.17	1.19	1.37	1.72	1.94	25.26	12.15	76.76	63.29	104.02	75.44	314.96
YPR067W	*ISA2*	0.85	1.05	1.04	1.15	1.48	1.68	22.65	10.41	72.35	49.53	95.20	59.94	302.31
YPR068C	*HOS1*	0.99	1.40	1.59	1.90	2.06	2.17	18.39	11.17	58.00	47.91	76.39	59.07	342.39
YPR069C	*SPE3*	1.00	1.43	1.67	2.03	2.17	2.27	15.38	8.04	55.55	41.46	70.94	49.50	335.59
YPR070W	*MED1*	1.04	1.25	1.29	1.43	1.70	1.92	45.35	36.01	88.11	78.31	133.46	114.31	388.60
YPR071W	*YPR071w*	0.95	1.35	1.57	1.92	2.07	2.19	18.38	9.21	56.35	42.95	74.72	52.16	353.50
YPR072W	*NOT5*	0.90	1.08	1.19	1.56	1.78	1.96	1.42	0.68	14.33	0.91	15.75	1.59	293.84
YPR073C	*LTP1*	0.93	1.27	1.42	1.77	1.94	2.09	16.40	7.26	56.28	36.59	72.68	43.85	343.08
YPR074C	*TKL1*	0.94	1.10	1.11	0.98	1.09	1.17	111.40	96.72	133.76	126.46	245.16	223.18	481.98
YPR075C	*OPY2*	0.92	1.32	1.47	1.78	1.94	2.08	19.37	9.40	54.95	43.91	74.32	53.31	358.25
YPR076W	*YPR076w*	0.93	1.40	1.59	1.98	2.12	2.24	14.15	6.09	52.84	33.07	66.99	39.17	333.54
YPR077C	*YPR077c*	0.91	1.32	1.50	1.88	2.04	2.16	22.05	13.70	62.91	50.14	84.95	63.84	361.81
YPR078C	*YPR078c*	0.93	1.13	1.33	1.77	2.00	2.16	8.25	1.48	52.26	21.42	60.52	22.91	303.60
YPR079W	*MRL1*	0.98	1.34	1.46	1.91	2.10	2.22	17.86	4.90	56.50	31.54	74.36	36.44	354.00
YPR083W	*MDM36*	0.93	1.25	1.45	1.93	2.11	2.23	0.46	0.18	16.23	3.21	16.69	3.39	281.08
YPR084W	*YPR084w*	0.93	1.25	1.47	1.85	2.02	2.13	19.42	5.94	61.77	35.05	81.19	40.99	355.30
YPR087W	*VPS69*	0.92	1.21	1.34	1.66	1.87	2.02	26.77	19.18	67.01	59.83	93.78	79.01	338.10
YPR089W	*YPR089w*	0.99	1.44	1.65	1.98	2.13	2.22	16.89	7.47	55.65	38.07	72.54	45.54	342.24
YPR089W	*YPR089w*	0.90	1.18	1.31	1.69	1.90	2.03	8.23	1.05	53.26	13.02	61.48	14.07	301.40
YPR090W	*YPR090w*	0.94	1.32	1.54	1.91	2.08	2.19	16.71	6.94	57.86	37.17	74.57	44.11	352.70
YPR091C	*YPR091c*	0.91	1.22	1.42	1.90	2.06	2.15	3.20	0.71	38.22	20.18	41.42	20.89	288.48
YPR092W	*YPR092w*	0.91	1.26	1.45	1.81	1.98	2.11	17.59	6.22	57.94	31.98	75.53	38.19	341.56
YPR093C	*ASR1*	0.99	1.45	1.68	2.02	2.17	2.28	13.44	8.39	49.50	37.99	62.94	46.38	334.35
YPR095C	*SYT1*	0.88	1.26	1.40	1.76	1.95	2.09	11.53	4.50	47.04	24.06	58.56	28.56	320.44
YPR096C	*YPR096c*	0.88	1.23	1.36	1.71	1.89	2.05	7.42	4.41	38.54	24.26	45.96	28.66	314.74
YPR097W	*YPR097w*	0.91	1.29	1.40	1.73	1.91	2.07	21.79	6.93	65.00	36.93	86.79	43.86	351.21
YPR098C	*YPR098c*	0.94	1.35	1.47	1.83	2.00	2.13	15.65	8.45	53.46	41.02	69.11	49.47	347.71
YPR098C	*YPR098c*	0.94	1.25	1.42	1.81	1.98	2.10	7.30	1.38	48.43	16.64	55.72	18.02	299.60
YPR099C	*YPR099c*	0.93	1.21	1.21	1.25	1.50	1.69	43.47	22.33	103.66	88.66	147.14	111.00	343.50
YPR100W	*MRPL51*	1.00	1.19	1.14	1.07	1.08	1.02	101.19	104.52	102.82	105.53	204.01	210.05	530.15
YPR100W	*MRPL51*	0.93	1.29	1.40	1.80	1.98	2.11	3.82	1.27	40.73	11.40	44.55	12.67	242.16
YPR101W	*SNT309*	0.96	1.29	1.45	1.78	1.96	2.07	47.66	39.02	82.75	79.00	129.84	118.02	369.29
YPR106W	*ISR1*	0.89	1.12	1.22	1.63	1.80	2.01	3.39	3.43	15.06	10.36	18.45	13.78	271.92
YPR108W-A	*YPR108w-a*	0.92	1.25	1.43	1.84	2.05	2.18	2.61	0.65	34.54	5.74	37.14	6.38	272.65
YPR109W	*YPR109w*	0.85	1.11	1.30	1.64	1.82	1.96	3.71	3.77	21.42	18.29	25.13	22.06	275.41
YPR111W	*DBF20*	1.10	1.61	1.78	2.11	2.27	2.42	3.27	3.38	7.01	5.29	10.28	8.66	259.00
YPR114W	*YPR114w*	0.96	1.37	1.54	1.92	2.05	2.23	4.90	4.07	31.14	20.86	36.05	24.93	290.24
YPR115W	*RGC1*	0.93	1.28	1.46	1.90	2.05	2.24	3.22	3.38	15.02	8.33	18.24	11.70	283.35
YPR116W	*RRG8*	0.92	1.10	1.13	1.61	1.81	2.05	14.98	5.85	59.68	35.90	74.65	41.75	286.97
YPR117W	*YPR117w*	0.94	1.19	1.31	1.70	1.86	2.05	8.85	3.98	44.25	22.18	53.10	26.16	309.33
YPR118W	*MRI1*	0.96	1.31	1.55	2.01	2.16	2.26	15.57	0.01	58.30	1.93	73.87	1.94	340.37
YPR119W	*CLB2*	0.92	1.10	1.11	1.30	1.44	1.64	33.41	18.79	79.34	63.55	112.76	82.34	344.47
YPR120C	*CLB5*	0.87	1.06	1.14	1.60	1.84	2.05	3.03	3.19	5.97	2.57	9.00	5.76	279.68
YPR121W	*THI22*	0.87	1.15	1.31	1.75	1.92	2.10	3.35	3.32	12.07	5.61	15.42	8.93	250.69
YPR122W	*AXL1*	0.90	1.15	1.26	1.59	1.74	1.95	3.31	3.82	15.52	4.64	18.83	8.47	277.34
YPR123C	*YPR123c*	0.90	1.20	1.33	1.64	1.76	1.92	7.35	4.95	39.03	25.51	46.38	30.46	297.97
YPR124W	*CTR1*	1.15	1.33	1.37	1.83	2.10	2.44	14.44	14.75	61.37	59.94	75.80	74.69	287.07
YPR125W	*YLH47*	0.90	1.25	1.42	1.95	1.92	2.09	3.26	3.51	8.06	9.41	11.32	12.92	259.74
YPR126C	*YPR126c*	0.94	1.32	1.48	1.83	1.97	2.13	4.15	3.81	25.20	13.50	29.36	17.31	264.24
YPR127W	*YPR127w*	0.89	1.29	1.41	1.82	1.96	2.10	3.99	3.53	24.57	8.88	28.56	12.41	272.86
YPR128C	*ANT1*	0.91	1.26	1.43	1.82	1.97	2.15	6.31	3.78	39.02	14.92	45.32	18.70	285.23
YPR129W	*SCD6*	1.01	1.46	1.69	2.09	2.20	2.34	11.89	5.67	52.74	30.25	64.63	35.92	292.82
YPR130C	*YPR130c*	1.00	1.28	1.41	1.83	2.00	2.19	17.82	8.84	61.33	44.64	79.15	53.48	327.84
YPR131C	*NAT3*	0.90	1.15	1.16	1.37	1.69	1.98	13.87	3.21	72.45	30.55	86.32	33.76	299.94
YPR132W	*RPS23b*	0.87	1.06	1.13	1.58	1.77	1.95	6.27	3.32	40.97	7.58	47.24	10.90	295.44
YPR133W-A	*TOM5*	0.91	1.22	1.33	1.80	2.01	2.14	5.95	0.97	52.95	10.59	58.90	11.56	288.80
YPR134W	*MSS18*	0.86	1.07	1.17	1.54	1.73	1.92	3.70	3.33	22.33	6.11	26.03	9.44	274.84
YPR135W	*CTF4*	0.89	1.03	1.01	1.10	1.20	1.36	27.19	14.23	76.26	60.24	103.46	74.47	320.78
YPR138C	*MEP3*	0.95	1.30	1.46	1.83	1.98	2.14	3.19	3.26	7.22	3.46	10.41	6.72	259.00
YPR138C	*MEP3*	0.97	1.48	1.71	1.99	2.17	2.26	1.17	1.17	6.01	4.51	7.18	5.67	249.24
YPR139C	*VPS66*	0.91	1.25	1.26	1.52	1.74	1.97	12.38	1.13	57.78	6.79	70.16	7.92	246.44
YPR140W	*TAZ1*	0.85	1.13	1.34	1.61	1.71	1.87	5.39	3.97	34.97	22.43	40.35	26.40	285.33
YPR141C	*KAR3*	0.91	1.17	1.26	1.58	1.73	1.94	13.12	3.79	57.09	22.05	70.21	25.84	313.07
YPR141C	*KAR3*	0.94	1.27	1.30	1.49	1.74	1.95	18.33	4.11	74.34	35.84	92.67	39.95	288.83
YPR145W	*ASN1*	0.93	1.26	1.39	1.79	1.96	2.15	3.75	3.32	25.40	7.87	29.16	11.19	286.66
YPR146C	*YPR146c*	0.90	1.18	1.30	1.60	1.73	1.91	5.08	3.38	34.60	9.47	39.68	12.86	301.57
YPR147C	*YPR147c*	0.91	1.23	1.39	1.80	1.93	2.11	10.96	5.05	51.53	30.82	62.49	35.87	320.04
YPR148C	*YPR148c*	0.99	1.33	1.49	1.93	2.07	2.25	17.84	5.30	61.35	31.67	79.19	36.97	340.22
YPR149W	*NCE102*	0.90	1.17	1.30	1.73	1.87	2.06	20.16	9.47	63.55	43.77	83.71	53.24	351.09
YPR150W	*YPR150w*	0.88	1.12	1.28	1.65	1.82	1.98	9.99	3.41	50.01	11.30	60.01	14.71	318.23
YPR151C	*SUE1*	1.03	1.39	1.63	2.08	2.23	2.32	9.10	3.77	52.90	39.94	62.00	43.71	318.44
YPR152C	*URN1*	0.93	1.24	1.40	1.77	1.95	2.12	3.46	3.43	17.87	7.72	21.33	11.15	276.58
YPR153W	*YPR153w*	0.89	1.15	1.25	1.55	1.68	1.84	6.08	4.68	34.05	24.81	40.12	29.49	301.12
YPR154W	*PIN3*	0.91	1.21	1.42	2.07	2.07	2.05	3.65	3.49	21.71	13.04	25.36	16.53	278.93
YPR155C	*NCA2*	0.85	1.25	1.32	1.54	1.67	1.78	10.67	3.62	50.25	14.19	60.92	17.81	317.18
YPR156C	*TPO3*	0.91	1.17	1.27	1.64	1.78	1.96	13.25	4.16	54.68	22.10	67.93	26.26	310.02
YPR157W	*YPR157w*	0.89	1.19	1.33	1.74	1.88	2.04	8.32	3.62	43.44	13.18	51.76	16.80	303.53
YPR158W	*CUR1*	0.89	1.17	1.31	1.71	1.86	2.03	13.65	4.17	57.85	23.06	71.50	27.23	324.97
YPR159C-A	*YPR159c-a*	1.02	1.36	1.53	1.92	2.10	2.23	1.30	0.81	19.72	6.79	21.02	7.60	263.96
YPR159W	*KRE6*	0.88	1.02	1.00	1.13	1.32	1.62	31.83	11.09	80.59	50.59	112.43	61.69	331.82
YPR160W	*GPH1*	1.00	1.29	1.38	1.68	1.78	1.96	25.31	11.17	77.26	59.78	102.57	70.95	398.50
YPR163C	*TIF3*	0.86	1.10	1.19	1.58	1.72	1.92	21.74	11.76	65.81	49.06	87.55	60.82	354.39
YPR164W	*MMS1*	0.90	1.14	1.18	1.60	1.79	1.98	17.96	9.37	67.93	50.80	85.88	60.17	336.78

ORF.name	Strain	Optical density at 600 nm at regular intervals (h)						GLUCOSE		FRUCTOSE		TOTAL SUGARS (g/l)		TOTAL AMINO ACIDS (mg/L)
		0	26	33	48	59	78	102 h	118 h	102 h	118 h	102 h	118 h	102 h
YPR166C	*MRP2*	0.90	1.22	1.33	1.80	1.96	2.11	**15.91**	**7.25**	**64.74**	**44.70**	**80.65**	**51.95**	**335.42**
YPR167C	*MET16*	0.93	1.31	1.40	1.85	2.03	2.19	**2.97**	**3.32**	**13.09**	**3.70**	**16.06**	**7.01**	**281.34**
YPR170C	*YPR170c*	0.87	1.20	1.21	1.63	1.83	2.00	**7.27**	**3.50**	**45.42**	**15.05**	**52.69**	**18.54**	**303.36**
YPR171W	*BSP1*	0.88	1.23	1.30	1.75	1.93	2.08	**7.63**	**3.40**	**46.70**	**14.61**	**54.32**	**18.00**	**304.48**
YPR172W	*YPR172w*	0.88	1.21	1.28	1.73	1.94	2.11	**3.07**	**3.40**	**18.05**	**5.49**	**21.12**	**8.88**	**288.03**
YPR173C	*VPS4*	0.95	1.34	1.42	1.76	1.86	1.95	**25.70**	**18.28**	**77.56**	**74.98**	**103.26**	**93.26**	**383.40**
YPR174C	*YPR174c*	0.89	1.33	1.38	1.77	1.97	2.13	**7.50**	**3.47**	**46.76**	**20.06**	**54.26**	**23.53**	**310.40**
YPR179C	*HDA3*	0.88	1.27	1.29	1.82	2.02	2.17	**5.76**	**3.33**	**37.19**	**16.89**	**42.94**	**20.22**	**292.18**
YPR184W	*GDB1*	0.89	1.23	1.30	1.81	1.98	2.12	**12.46**	**3.36**	**48.75**	**19.25**	**61.21**	**22.61**	**333.28**
YPR185W	*ATG13*	0.94	1.26	1.27	1.77	1.99	2.18	**5.31**	**3.04**	**34.93**	**9.49**	**40.23**	**12.52**	**306.25**
YPR188C	*MLC2*	0.98	1.37	1.39	1.93	2.10	2.23	**12.24**	**9.41**	**55.15**	**46.79**	**67.39**	**56.19**	**330.49**
YPR189W	*SKI3*	0.97	1.24	1.30	1.71	1.90	2.08	**15.82**	**5.85**	**58.08**	**37.40**	**73.90**	**43.25**	**323.64**
YPR191W	*QCR2*	0.93	1.20	1.30	1.66	1.83	2.02	**11.46**	**4.78**	**55.17**	**33.11**	**66.64**	**37.89**	**315.58**
YPR192W	*AQY1*	0.97	1.25	1.36	1.79	1.98	2.18	**6.89**	**3.25**	**41.71**	**10.91**	**48.61**	**14.16**	**309.63**
YPR193C	*HPA2*	0.91	1.15	1.21	1.57	1.75	1.96	**4.92**	**3.17**	**33.57**	**6.32**	**38.49**	**9.49**	**303.36**
YPR194C	*OPT2*	0.93	1.24	1.31	1.57	1.69	1.84	**25.33**	**11.93**	**74.95**	**66.11**	**100.28**	**78.04**	**376.41**
YPR195C	*YPR195c*	1.04	1.36	1.50	1.96	2.12	2.29	**6.00**	**3.51**	**37.98**	**15.74**	**43.98**	**19.25**	**311.05**
YPR196W	*YPR196w*	0.90	1.15	1.22	1.61	1.80	2.02	**8.67**	**3.62**	**47.05**	**19.59**	**55.72**	**23.21**	**317.87**
YPR197C	*YPR197c*	1.05	1.52	1.73	2.13	2.25	2.36	**3.47**	**3.19**	**14.61**	**5.59**	**18.08**	**8.78**	**277.44**
YPR198W	*SGE1*	0.93	1.24	1.36	1.84	2.01	2.20	**4.22**	**3.28**	**27.45**	**9.21**	**31.66**	**12.49**	**294.82**
YPR199C	*ARR1*	0.95	1.22	1.33	1.82	2.01	2.21	**8.05**	**3.30**	**45.90**	**11.96**	**53.95**	**15.26**	**307.28**
YPR200C	*ARR2*	0.92	1.19	1.27	1.77	1.97	2.17	**11.73**	**6.91**	**52.20**	**37.49**	**63.93**	**44.39**	**323.28**
YPR201W	*ARR3*	0.95	1.30	1.37	1.91	2.09	2.21	**20.38**	**13.24**	**66.15**	**57.99**	**86.53**	**71.23**	**346.02**

Appendix 2. Micro-fermentation data of WYDL_HN (all candidates).

	Optical density at 600 nm at time intervals (h)					GLUCOSE		FRUCTOSE		TOTAL Sugars(g/L)		TOTAL AMINO ACIDS (mg/L)
ORF	0	20	27	42	67	43 h	67 h	43 h	67 h	43 h	67 h	48 h
YAL002W	0.95	1.70	2.00	2.28	2.36	20.46	4.99	71.52	32.32	91.98	37.31	111.86
YAL007C	0.92	1.52	1.73	1.97	2.03	30.19	4.89	78.00	30.22	108.20	35.11	206.13
YAL012W	0.88	1.39	1.65	2.05	2.23	38.63	6.81	107.69	41.10	146.32	47.91	153.22
YAL013W	0.89	1.60	1.88	2.22	2.34	29.74	4.16	91.73	28.84	121.47	33.00	94.93
YAL014C	0.86	1.51	1.80	2.17	2.26	28.41	3.11	85.17	26.79	113.58	29.90	87.39
YAL015C	0.88	1.61	1.89	2.23	2.31	16.93	1.76	87.42	5.65	104.35	7.41	167.59
YAL030W	0.98	1.76	2.00	2.21	2.29	31.39	2.22	106.81	21.09	138.19	23.31	85.20
YAL031C	0.98	1.79	2.09	2.35	2.40	23.58	2.49	85.61	22.76	109.20	25.25	109.35
YAL036C	0.95	1.88	2.16	2.39	2.43	21.68	2.64	84.50	21.61	106.18	24.25	86.65
YAL037C-A	0.92	1.55	1.81	1.97	2.08	41.21	5.91	98.67	32.92	139.89	38.84	125.84
YAL044C	0.96	1.66	1.95	2.26	2.35	23.44	3.53	76.45	24.89	99.89	28.42	104.56
YAL044W-A	0.95	1.90	2.20	2.40	2.48	10.64	1.64	51.44	6.95	62.07	8.59	109.70
YAL049C	1.00	1.37	1.50	2.02	2.48	91.11	18.47	147.66	77.64	238.78	96.11	304.38
YAL051W	0.94	1.54	1.74	2.13	2.38	41.86	4.54	107.01	38.91	148.87	43.46	123.26
YAL055W	0.89	1.46	1.72	2.09	2.29	53.94	6.37	124.72	49.05	178.66	55.42	111.09
YAL059W	1.01	1.68	2.00	2.21	2.35	14.04	2.34	78.69	30.42	92.73	32.76	157.62
YAL062W	0.91	1.45	1.73	2.05	2.18	53.72	5.61	121.74	37.56	175.46	43.17	187.81
YAR009C	0.92	1.45	1.70	2.07	2.33	32.02	4.12	93.74	46.92	125.76	51.04	94.14
YAR015W	0.96	1.81	2.05	2.22	2.34	24.12	2.35	80.40	17.29	104.52	19.64	80.39
YAR020C	0.98	1.40	1.69	1.90	2.07	36.79	2.53	118.88	25.84	155.67	28.37	105.33
YAR027W	0.91	1.59	1.87	2.20	2.27	21.74	2.42	75.08	20.23	96.82	22.64	86.41
YAR029W	0.95	1.65	1.97	2.26	2.32	22.57	2.19	78.99	19.56	101.56	21.75	91.55
YAR033W	0.89	1.61	1.89	2.24	2.30	29.26	3.56	92.78	26.62	122.04	30.18	105.83
YAR064W	0.92	1.65	1.96	2.24	2.31	22.61	2.41	77.14	21.46	99.75	23.87	95.64
YAR073W	0.88	1.39	1.68	2.01	2.09	26.77	3.38	79.75	28.86	106.52	32.25	162.02
YBL003C	0.90	1.33	1.50	1.80	1.92	25.51	2.89	74.14	23.05	99.65	25.94	162.02
YBL005W	0.98	1.60	1.95	2.13	2.24	27.39	2.06	104.89	24.26	132.28	26.31	145.04
YBL007C	0.93	1.57	1.94	2.24	2.32	26.10	3.73	84.08	27.60	110.18	31.32	116.47
YBL008W-A	0.90	1.53	1.84	2.17	2.23	46.80	10.42	112.58	49.68	159.38	60.10	132.94
YBL013W	0.91	1.49	1.82	2.16	2.27	36.43	4.27	104.73	39.20	141.16	43.47	98.44
YBL024W	0.87	1.32	1.66	2.12	2.26	41.77	2.47	105.07	24.06	146.84	26.53	101.24
YBL027W	0.88	1.51	1.80	2.12	2.20	31.25	2.66	101.33	23.08	132.58	25.74	68.27
YBL028C	0.98	1.89	2.16	2.31	2.43	22.08	2.51	82.17	16.14	104.25	18.64	80.44
YBL037W	1.06	1.79	2.10	2.34	2.45	24.55	2.06	83.12	21.43	107.67	23.50	104.59
YBL043W	1.02	1.75	2.04	2.32	2.38	25.33	2.03	87.02	19.10	112.35	21.13	86.03
YBL054W	0.98	1.67	1.95	2.25	2.33	30.80	2.81	95.41	24.75	126.22	27.56	129.83
YBL082C	1.03	1.76	2.02	2.27	2.37	23.53	2.48	79.63	23.71	103.17	26.19	95.55
YBR016W	1.00	1.52	1.85	2.09	2.21	31.45	2.77	112.88	28.00	144.34	30.78	61.19
YBR033W	0.96	1.35	1.51	1.82	2.01	30.01	3.27	107.11	33.79	137.12	37.06	76.64
YBR047W	1.01	1.68	2.04	2.32	2.43	31.29	3.31	86.58	30.51	117.86	33.82	116.26
YBR056W	0.98	1.61	1.90	2.20	2.34	28.00	2.27	88.97	23.22	116.98	25.49	108.63
YBR086C	0.97	1.41	1.74	2.11	2.25	37.39	2.69	119.30	30.36	156.69	33.05	9.61
YBR101C	1.19	1.83	2.08	2.35	2.49	33.19	4.67	89.54	36.55	122.73	41.22	123.55
YBR103W	0.96	1.26	1.58	1.96	2.12	28.62	4.48	102.64	37.62	131.26	42.10	190.56
YBR108W	0.98	1.42	1.75	2.08	2.22	28.03	2.38	110.63	30.74	138.66	33.12	65.13
YBR114W	1.08	1.86	2.10	2.37	2.41	11.17	1.52	68.80	6.21	79.98	7.72	254.64
YBR125C	1.04	1.84	2.17	2.36	2.51	33.42	4.94	79.55	37.33	112.97	42.27	172.15
YBR129C	0.93	1.47	1.78	2.23	2.31	25.96	2.06	90.69	15.91	116.65	17.97	150.64
YBR132C	0.97	0.96	0.96	1.05	0.98	142.73	140.07	241.89	221.54	384.62	361.61	514.61
YBR146W	0.97	1.48	1.84	2.15	2.38	55.66	8.36	122.79	56.42	178.44	64.79	198.00
YBR150C	0.92	1.37	1.88	2.19	2.24	25.62	3.32	74.53	24.61	100.14	27.92	126.58
YBR162W-A	0.98	1.54	1.81	2.17	2.24	17.55	1.36	75.92	22.70	93.48	24.06	-2.98
YBR164C	0.95	1.64	1.95	2.29	2.34	17.98	1.11	86.00	20.94	103.98	22.05	-3.03
YBR171W	1.03	1.43	1.79	2.24	2.35	40.15	0.63	105.03	19.36	145.18	19.99	-3.13
YBR176W	1.10	1.83	2.13	2.41	2.45	22.55	1.20	79.12	22.38	101.66	23.58	-3.06
YBR180W	0.98	1.63	1.99	2.23	2.43	40.19	3.29	105.09	34.31	145.28	37.60	193.84
YBR183W	1.12	1.80	2.08	2.41	2.47	25.29	0.76	94.46	17.40	119.75	18.16	-3.22
YBR186W	0.91	1.22	1.53	2.00	2.05	23.48	3.04	90.82	25.59	114.30	28.63	227.10
YBR187W	1.06	1.87	2.17	2.39	2.47	24.48	1.95	82.93	19.99	107.42	21.94	124.33
YBR188C	1.08	1.66	1.92	2.32	2.40	21.55	1.25	83.48	18.34	105.03	19.58	-3.27
YBR194W	1.04	1.54	1.85	2.25	2.33	25.71	1.78	95.19	23.62	120.91	25.39	-3.08
YBR195C	1.03	1.85	2.14	2.33	2.43	26.13	2.68	88.45	28.00	114.58	30.68	146.12
YBR197C	0.90	1.23	1.47	1.90	2.04	26.88	1.67	92.03	26.60	118.91	28.27	-3.53
YBR201W	0.96	1.40	1.72	2.14	2.26	32.83	0.25	113.35	16.79	146.18	17.04	-3.51
YBR203W	0.87	1.18	1.51	2.04	2.11	30.33	3.48	95.47	29.41	125.80	32.89	331.09
YBR204C	0.91	1.61	1.80	2.14	2.21	15.61	2.81	65.14	22.18	80.75	25.00	134.91
YBR204C	1.15	1.14	1.15	1.24	1.16	106.59	115.29	183.63	190.09	290.22	305.38	505.77
YBR205W	1.04	1.75	2.04	2.32	2.39	17.57	1.36	80.20	23.98	97.77	25.34	362.17
YBR207W	0.95	1.60	1.91	2.23	2.33	22.88	2.95	93.29	31.99	116.17	34.94	358.87
YBR212W	1.04	1.64	1.91	2.27	2.37	22.34	6.75	99.88	48.71	122.22	55.46	-3.06
YBR214W	0.86	1.28	1.69	2.11	2.18	25.01	2.80	79.72	17.53	104.74	20.33	242.60
YBR215W	1.03	1.63	1.92	2.24	2.37	34.79	6.02	91.83	45.54	126.62	51.56	194.10
YBR216C	0.98	1.48	1.79	2.17	2.25	22.76	2.37	92.44	29.62	115.20	31.99	-2.98
YBR217W	1.08	1.65	1.97	2.34	2.38	34.44	1.65	111.45	25.50	145.88	27.15	-3.20
YBR221W-A	1.06	1.91	2.20	2.41	2.48	26.20	3.61	82.83	31.74	109.03	35.35	177.20
YBR222C	0.98	1.64	1.95	2.24	2.34	26.77	3.12	81.47	27.02	108.23	30.14	220.12
YBR223C	0.99	1.52	1.77	2.14	2.22	23.23	1.48	96.01	24.26	119.24	25.74	-2.99
YBR227C	1.09	1.60	1.92	2.34	2.41	24.52	2.55	88.34	32.49	112.86	35.04	-3.06
YBR228W	1.09	1.80	2.07	2.37	2.45	20.75	4.19	89.89	47.42	110.64	51.60	-3.27
YBR230C	0.99	1.45	1.73	2.15	2.24	27.67	2.00	99.53	23.78	127.20	25.78	-2.93
YBR231C	0.88	1.11	1.29	1.70	1.84	51.68	1.13	119.38	20.58	171.06	21.71	-3.23
YBR233W	0.96	1.41	1.73	2.17	2.27	26.73	0.48	92.06	15.88	118.79	16.35	-3.35
YBR238C	0.99	1.40	1.74	2.17	2.26	52.56	0.50	136.63	16.68	189.20	17.19	-3.54
YBR239C	0.97	1.64	1.96	2.25	2.32	35.20	5.45	92.09	41.59	127.29	47.04	152.52
YBR240C	1.03	1.76	2.04	2.31	2.42	21.54	3.42	63.87	30.13	85.41	33.55	177.94
YBR241C	1.00	1.66	2.01	2.24	2.38	39.89	9.49	99.34	52.51	139.23	62.00	193.25
YBR242W	0.88	1.38	1.88	2.03	2.12	22.74	2.53	94.40	38.06	117.14	40.59	434.13
YBR245C	1.03	1.71	2.03	2.26	2.45	40.64	4.73	95.72	39.14	136.35	43.87	221.26
YBR246W	0.95	1.41	1.71	2.09	2.23	30.41	1.91	110.86	32.29	141.28	34.20	441.69
YBR251W	1.03	1.57	1.89	2.25	2.34	24.42	1.82	104.68	26.13	129.10	27.95	-3.42
YBR255W	0.96	1.37	1.64	2.00	2.08	27.90	0.98	92.88	20.46	120.78	21.44	-3.05
YBR258C	1.13	1.84	2.10	2.39	2.46	25.86	10.30	97.54	69.36	123.40	79.67	-3.39
YBR259W	0.99	1.38	1.68	2.12	2.22	23.07	0.30	88.37	32.97	111.44	33.27	-3.20
YBR260C	1.07	1.81	2.12	2.30	2.47	37.01	4.05	102.96	36.67	139.97	40.72	173.21
YBR261C	0.92	1.28	1.60	2.07	2.16	42.56	181.08	125.62	172.53	168.18	353.61	-3.15
YBR262C	0.94	1.23	1.45	1.90	2.02	29.47	1.44	103.66	30.75	133.13	32.18	-2.79
YBR264C	1.00	1.74	2.03	2.26	2.37	12.17	-0.09	67.64	14.06	79.80	13.97	98.15
YBR267W	0.91	1.15	1.52	1.72	1.88	25.39	3.77	77.64	23.81	103.03	27.58	353.65
YBR268W	1.03	1.92	2.20	2.36	2.44	13.51	0.09	73.17	13.31	86.68	13.40	154.65
YBR269C	1.02	1.88	2.17	2.36	2.45	19.73	0.48	84.18	16.83	103.92	17.30	135.96
YBR271W	1.06	1.86	2.14	2.38	2.45	20.61	1.44	88.31	18.28	108.92	19.73	165.70
YBR272C	0.98	1.77	2.07	2.31	2.40	16.95	0.29	80.38	13.94	97.33	14.22	105.81
YBR276C	1.04	1.58	1.76	2.11	2.34	57.56	9.12	118.84	57.52	176.40	66.63	256.42
YBR280C	1.00	1.83	2.13	2.32	2.40	23.39	1.17	95.37	15.80	118.76	16.97	161.04
YBR281C	0.94	1.51	1.79	2.14	2.35	35.69	4.07	97.87	37.50	133.56	41.57	101.84
YBR285W	0.98	1.62	1.93	2.23	2.34	23.86	1.96	87.49	19.99	111.35	21.94	103.60
YBR287W	1.10	2.02	2.13	2.30	2.41	29.47	2.44	95.98	27.25	125.45	29.69	161.83
YBR288C	0.96	1.57	1.88	2.20	2.33	31.39	1.59	98.01	25.43	129.40	27.02	187.99
YBR290W	0.98	1.68	2.24	1.57	0.74	25.31	0.76	90.60	20.31	115.91	21.08	240.42
YBR293W	0.93	1.46	1.79	2.12	2.29	17.18	0.94	72.26	19.23	89.44	20.18	307.58
YBR295W	1.04	1.80	2.11	2.36	2.44	21.74	2.03	75.04	18.07	96.79	20.10	156.99
YBR297W	0.89	1.16	2.02	1.98	2.08	27.13	4.95	71.30	35.85	98.43	40.79	345.09
YBR298C	0.90	1.43	1.69	1.98	2.21	25.51	0.52	91.33	18.80	116.84	19.32	119.77
YBR299W	0.89	1.57	1.87	2.12	2.27	10.37	-0.25	74.34	2.04	84.71	1.80	68.15
YBR301W	1.03	1.45	1.73	2.24	2.33	60.88	7.56	124.03	54.61	184.91	62.17	236.18
YCL001W	1.06	1.51	1.83	2.22	2.40	53.20	6.35	108.21	44.04	161.41	50.39	188.34
YCL001W-A	1.02	1.81	2.08	2.32	2.40	14.66	0.29	67.72	11.12	82.38	11.40	138.28
YCL002C	1.01	1.77	2.07	2.33	2.40	24.04	3.05	78.06	26.24	102.10	29.29	155.13
YCL005W-A	1.05	1.84	2.13	2.37	2.45	27.06	3.69	80.16	28.20	107.22	31.89	163.88
YCL008C	0.89	1.16	1.86	1.78	1.91	40.07	3.65	106.36	52.67	146.44	56.32	432.44
YCL009C	0.93	1.51	1.81	2.16	2.26	16.45	0.04	76.89	11.33	93.34	11.37	122.66
YCL010C	0.97	1.61	1.89	2.21	2.35	10.91	-0.16	60.26	7.63	71.17	7.47	235.04
YCL011C	1.00	1.66	1.82	2.15	2.26	22.57	0.92	82.16	21.84	104.74	22.76	82.59
YCL019W	1.05	1.97	2.22	2.39	2.48	24.71	3.01	71.99	29.87	96.69	32.88	188.36
YCL024W	1.08	1.99	2.20	2.35	2.47	26.42	3.01	78.93	30.65	105.35	33.66	190.45
YCL025C	1.10	1.63	1.85	2.09	2.27	45.39	6.47	108.84	46.95	154.22	53.41	175.21

ORF	Optical density at 600 nm at time intervals (h)					GLUCOSE		FRUCTOSE		TOTAL Sugars(g/L)		TOTAL AMINO ACIDS (mg/L)
	0	20	27	42	67	43 h	67 h	43 h	67 h	43 h	67 h	48 h
YCL032W	0.86	1.08	1.39	1.94	2.03	32.48	3.62	93.84	28.25	126.32	31.86	58.82
YCL034W	1.07	1.59	1.91	2.31	2.38	25.21	2.46	86.02	15.89	111.23	18.34	304.18
YCL055W	0.91	1.33	1.70	2.17	2.24	22.80	2.68	89.20	17.67	112.00	20.35	328.58
YCR015C	0.88	1.17	1.44	1.94	2.00	28.93	2.66	88.83	18.15	117.76	20.81	232.05
YCR020C	0.94	1.41	1.75	2.19	2.24	24.57	2.33	97.67	20.90	122.23	23.23	314.21
YCR034W	0.84	0.97	1.08	1.36	1.36	60.86	16.08	110.28	59.58	171.13	75.66	256.56
YCR075W-A	0.86	0.85	0.86	0.96	0.87	142.14	128.30	160.86	195.93	303.00	324.23	521.41
YCR106W	0.92	1.25	1.54	2.06	2.14	31.60	3.30	93.87	26.80	125.46	30.10	354.71
YDL001W	0.91	0.90	0.90	1.00	0.91	104.91	108.18	173.63	166.17	278.55	274.35	523.06
YDL012C	0.97	1.45	1.81	2.26	2.30	22.87	4.58	59.47	29.78	82.33	34.36	358.05
YDL022W	0.91	1.24	1.58	2.11	2.18	21.82	4.26	70.57	39.78	92.39	44.04	286.68
YDL039C	0.87	1.10	1.35	1.88	1.95	28.93	3.97	76.59	28.80	105.51	32.76	253.12
YDL076C	0.96	1.64	1.95	2.25	2.34	19.53	0.65	80.73	17.28	100.26	17.93	164.02
YDL078C	0.93	1.73	2.04	2.28	2.37	21.43	0.48	83.66	16.83	105.08	17.30	138.52
YDL081C	0.92	0.96	1.05	1.58	1.92	86.70	26.88	159.26	101.47	245.96	128.35	328.89
YDL082W	1.01	1.98	2.06	2.16	2.24	8.90	0.50	65.79	4.99	74.69	5.50	74.07
YDL083C	0.93	1.05	1.05	1.08	1.02	183.51	163.40	167.18	152.56	350.69	315.96	522.99
YDL085C-A	0.95	1.04	1.03	0.96	0.98	181.55	183.36	164.05	165.12	345.59	348.48	517.58
YDL085W	0.92	1.18	1.44	2.03	2.25	57.08	3.83	124.19	37.38	181.26	41.20	155.28
YDL086W	0.92	1.45	1.75	2.13	2.26	20.72	0.52	77.94	17.80	98.66	18.32	110.66
YDL088C	0.85	1.30	1.70	2.00	2.16	25.00	0.45	85.18	14.24	110.18	14.69	99.42
YDL091C	0.98	1.72	1.97	2.24	2.31	10.99	-0.12	64.50	9.64	75.49	9.53	109.82
YDL093W	0.95	1.72	2.01	2.27	2.35	15.24	1.26	68.90	11.21	84.14	12.46	140.60
YDL096C	1.10	1.54	1.88	2.28	2.37	32.04	3.28	100.55	35.04	132.59	38.32	146.48
YDL099W	0.98	1.60	1.89	2.23	2.29	13.16	-0.02	71.18	11.83	84.34	11.81	127.32
YDL100C	0.98	1.56	1.84	2.19	2.31	22.04	0.15	91.53	13.58	113.57	13.73	207.02
YDL109C	1.03	1.80	2.06	2.27	2.39	19.16	0.14	81.72	14.20	100.89	14.35	133.69
YDL112W	0.99	1.76	2.07	2.33	2.42	15.84	0.30	75.46	15.75	91.30	16.04	158.84
YDL114W	0.99	1.61	1.89	2.21	2.31	16.45	0.15	74.84	13.61	91.29	13.76	112.14
YDL117W	0.98	1.55	1.86	2.28	2.31	22.41	2.02	75.53	10.62	97.95	12.65	282.31
YDL119C	0.94	1.52	1.80	2.14	2.28	18.49	0.24	76.98	15.44	95.47	15.68	10.05
YDL121C	0.95	1.47	1.76	2.17	2.26	17.69	0.02	79.41	11.74	97.10	11.76	238.36
YDL122W	0.91	1.39	1.70	2.10	2.19	18.56	3.28	81.37	22.32	99.93	25.60	85.53
YDL123W	0.90	1.41	1.71	2.09	2.19	23.23	0.11	98.09	13.63	121.32	13.74	124.96
YDL130W	0.95	1.20	1.44	1.93	2.03	32.18	3.57	102.70	24.74	134.89	28.32	111.59
YDL130W-A	0.88	1.34	1.69	2.10	2.23	19.31	0.06	82.60	15.10	101.92	15.17	83.83
YDL144C	1.02	1.80	2.06	2.30	2.38	13.44	-0.11	75.72	9.84	89.16	9.73	72.23
YDL149W	0.94	1.33	1.66	2.15	2.18	33.50	6.38	100.34	43.31	133.84	49.69	208.71
YDL154W	0.98	1.76	2.04	2.28	2.36	13.69	-0.05	65.94	10.68	79.63	10.63	78.35
YDL156W	1.01	1.80	2.10	2.32	2.41	13.99	-0.16	74.20	8.98	88.18	8.82	105.49
YDL161W	0.99	1.73	2.17	2.15	2.24	15.73	0.46	71.03	13.07	86.77	13.53	243.95
YDL168W	0.97	1.63	2.24	1.99	2.00	13.41	0.03	68.22	12.98	81.63	13.01	146.26
YDL174C	0.91	1.63	1.94	2.26	2.33	17.32	0.59	79.61	11.89	96.94	12.48	168.69
YDL175C	0.95	1.54	1.80	2.15	2.29	20.01	0.74	80.35	13.50	100.35	14.25	239.54
YDL176W	0.92	1.41	1.68	2.07	2.23	18.46	0.88	79.26	17.26	97.72	18.14	113.84
YDL177C	0.94	1.40	1.69	2.13	2.24	24.75	2.53	99.27	16.34	124.02	18.88	318.65
YDL178W	1.03	1.78	2.07	2.31	2.38	13.11	-0.09	70.56	11.12	83.67	11.03	142.08
YDL182W	0.95	1.74	2.00	2.27	2.32	13.86	0.75	70.77	14.55	84.63	15.30	79.53
YDL184C	1.01	1.81	2.09	2.34	2.39	16.18	0.38	78.94	14.19	95.12	14.57	99.69
YDL188C	0.90	1.49	1.83	2.02	2.14	21.96	1.80	80.14	19.13	102.10	20.93	80.94
YDL194W	0.91	1.60	1.81	2.07	2.21	16.48	2.31	67.84	20.83	84.32	23.14	75.77
YDL198C	1.03	1.88	2.16	2.38	2.44	20.54	1.40	85.56	23.29	106.10	24.69	87.39
YDL200C	0.95	1.69	1.97	2.22	2.32	11.02	0.32	67.17	11.85	78.19	12.17	107.24
YDL201W	1.03	1.73	2.06	2.34	2.43	23.19	0.89	93.50	18.78	116.69	19.67	88.93
YDL203C	0.92	1.53	1.79	2.13	2.26	14.52	0.11	79.20	7.92	93.72	8.03	168.07
YDL211C	0.90	1.47	1.78	2.14	2.24	19.78	0.76	83.68	14.64	103.46	15.40	149.18
YDL213C	0.93	1.55	1.84	2.19	2.31	16.40	1.02	69.13	16.88	85.53	17.91	135.34
YDL215C	0.93	1.43	1.71	2.09	2.20	19.32	1.13	78.56	18.25	97.88	19.38	151.57
YDL219W	0.87	1.38	1.69	2.08	2.19	18.04	1.05	73.55	19.05	91.60	20.11	88.37
YDL222C	0.85	1.24	1.77	1.93	2.05	15.34	1.06	72.20	19.79	87.55	20.85	73.02
YDL226C	0.91	1.59	1.81	2.18	2.21	24.02	4.29	75.06	29.73	99.08	34.02	152.09
YDL227C	0.91	1.56	1.77	2.16	2.20	17.88	3.50	68.34	28.40	86.23	31.90	126.73
YDL232W	1.05	1.15	1.13	1.02	1.09	185.50	168.34	186.30	163.21	371.80	331.56	518.46
YDL233W	1.04	1.85	2.11	2.34	2.38	17.46	2.31	82.57	25.25	100.03	27.56	100.30
YDL234C	1.00	1.83	2.10	2.33	2.37	14.14	0.57	69.07	14.73	83.21	15.30	76.94
YDL238C	1.00	1.78	2.03	2.28	2.37	15.13	1.17	77.01	14.69	92.13	15.86	74.99
YDL239C	0.96	1.76	2.05	2.28	2.37	13.32	0.79	72.38	11.87	85.70	12.66	119.62
YDL243C	0.97	1.79	2.05	2.28	2.34	15.28	0.35	73.82	12.07	89.10	12.42	116.25
YDL245C	0.87	1.65	1.98	2.25	2.30	19.11	1.75	73.45	18.04	92.56	19.79	150.51
YDR003W	0.98	1.67	1.98	2.22	2.31	16.36	0.38	74.84	9.62	91.20	10.01	195.95
YDR004W	0.98	1.54	1.75	2.09	2.24	28.38	1.75	93.99	23.85	122.37	25.60	146.65
YDR005C	0.93	1.37	1.64	2.02	2.17	21.05	1.18	87.23	17.56	108.28	18.75	207.06
YDR009W	0.89	1.34	1.61	1.99	2.11	16.98	1.13	75.63	19.67	92.61	20.80	77.12
YDR015C	0.91	1.50	1.69	2.13	2.14	16.71	1.96	61.90	18.09	78.61	20.05	89.52
YDR015C	0.90	1.22	1.52	1.98	2.05	26.35	3.01	80.39	22.48	106.73	25.48	296.68
YDR034C	1.01	1.63	1.93	2.26	2.31	28.85	2.48	77.41	21.95	106.26	24.44	322.36
YDR036C	0.88	1.43	1.73	2.10	2.14	19.72	2.16	72.79	18.41	92.51	20.57	116.40
YDR036C	0.89	1.22	1.54	2.04	2.10	30.00	3.59	92.43	25.84	122.42	29.44	282.00
YDR076W	0.96	1.51	2.04	2.01	2.13	21.56	3.01	85.45	30.65	107.01	33.66	107.36
YDR084C	0.98	1.60	1.79	2.23	2.29	32.29	6.47	115.84	46.95	148.14	53.41	19.54
YDR085C	0.95	1.35	1.68	2.14	2.21	27.37	5.86	108.10	43.76	135.47	49.63	278.91
YDR092W	0.93	1.22	1.53	2.03	2.08	29.76	3.64	87.32	27.95	117.08	31.58	328.96
YDR096W	0.91	1.26	1.61	2.11	2.19	21.25	3.07	92.47	30.08	113.72	33.14	132.22
YDR099W	0.91	1.21	1.52	2.04	2.15	33.95	4.03	102.77	33.88	136.72	37.91	317.31
YDR104C	0.99	1.45	1.77	2.23	2.31	24.44	2.23	84.21	16.37	108.65	18.60	102.44
YDR108W	0.98	1.49	1.82	2.24	2.30	22.40	2.19	90.91	20.46	113.31	22.66	110.01
YDR119W	0.90	1.17	1.45	1.90	1.97	29.65	3.45	94.49	24.86	124.14	28.31	268.73
YDR123C	0.96	1.37	1.77	2.24	2.29	29.62	3.11	113.55	30.99	143.17	34.10	249.38
YDR129C	0.95	1.42	1.72	2.12	2.21	18.47	2.92	62.99	22.23	81.46	25.14	347.56
YDR130C	0.96	1.10	0.94	1.07	1.49	198.49	4.00	205.93	34.16	404.43	38.16	522.82
YDR134C	0.95	1.29	1.58	2.06	2.14	18.52	3.03	70.57	25.04	89.09	28.07	266.77
YDR142C	0.96	1.41	1.78	2.22	2.28	23.58	4.06	78.35	29.55	101.93	33.61	338.76
YDR144C	0.92	1.23	1.56	2.11	2.17	20.04	4.19	71.16	29.32	91.20	33.51	322.91
YDR152W	0.90	1.31	1.67	2.12	2.18	22.18	2.77	85.10	22.57	107.28	25.34	234.49
YDR155C	0.91	1.30	1.66	2.14	2.20	24.36	2.57	90.02	17.37	114.39	19.94	209.57
YDR158W	0.91	1.35	1.52	1.95	2.13	37.68	4.12	123.17	35.06	160.85	39.17	132.54
YDR163W	0.88	1.32	1.53	2.02	2.19	37.70	3.79	136.15	37.42	173.85	41.20	93.44
YDR165W	1.06	1.68	1.99	2.23	2.35	17.85	2.16	81.73	25.12	99.58	27.28	71.35
YDR169C	0.87	1.14	1.41	1.88	1.99	25.92	2.06	83.64	19.43	109.56	21.50	131.01
YDR171W	1.00	1.69	2.02	2.23	2.37	15.42	1.99	73.66	20.54	89.08	22.53	126.72
YDR174W	0.94	0.94	0.96	1.14	1.52	142.01	93.35	175.12	151.77	317.13	245.13	475.35
YDR178W	0.89	1.26	2.00	0.33	0.32	24.51	2.67	98.86	20.49	123.37	23.15	343.23
YDR179C	0.92	1.30	1.62	2.09	2.19	27.65	2.84	93.20	17.05	120.85	19.90	342.23
YDR184C	0.92	1.00	1.23	1.96	2.12	41.35	4.46	129.05	38.00	170.39	42.46	165.01
YDR185C	1.03	1.74	2.01	2.22	2.34	31.38	2.57	108.94	21.06	140.32	23.63	104.39
YDR204W	0.91	1.29	1.61	2.08	2.14	30.59	4.31	97.09	28.61	127.69	32.92	197.95
YDR205W	0.96	1.47	1.81	2.32	2.30	23.40	2.40	98.42	21.43	121.82	23.82	267.29
YDR210W	0.93	1.37	1.75	2.23	2.28	21.53	2.97	69.26	23.60	90.80	26.57	279.87
YDR213W	0.91	1.36	1.51	2.10	2.17	29.48	3.56	97.05	34.88	126.52	38.45	165.01
YDR214W	0.87	1.12	1.67	2.13	2.09	28.77	3.00	99.02	26.35	127.78	29.35	176.91
YDR216W	0.89	1.26	1.59	2.08	2.15	24.09	2.25	90.98	15.91	115.08	18.16	102.51
YDR218C	0.89	1.17	1.55	2.08	2.15	25.36	3.51	104.92	34.56	130.28	38.08	123.28
YDR229W	0.86	1.07	1.31	1.81	1.88	21.77	3.02	76.75	23.99	98.52	27.01	255.74
YDR231C	0.95	1.31	1.57	1.99	2.05	24.56	2.63	97.76	24.24	122.32	26.87	105.19
YDR241W	0.87	0.89	0.97	1.40	1.75	95.43	36.28	150.56	100.07	245.99	136.34	314.11
YDR242W	0.84	0.96	1.15	1.53	1.57	40.37	10.22	128.41	58.94	168.78	69.16	198.88
YDR244W	0.95	1.39	1.78	2.21	2.25	34.98	4.50	107.46	26.58	142.44	31.08	238.65
YDR247W	0.93	1.25	1.73	1.96	2.09	27.03	3.89	104.95	31.84	131.98	35.73	202.52
YDR252W	0.86	1.51	1.79	2.10	2.18	20.28	0.62	74.84	27.08	95.12	27.70	68.67
YDR253C	0.97	1.41	1.77	2.23	2.27	23.75	4.08	71.87	28.70	95.62	32.79	321.06
YDR254W	0.86	1.30	1.59	1.98	2.16	17.83	0.09	78.09	15.12	95.92	15.21	130.75
YDR255C	1.04	1.91	2.04	2.25	2.36	10.95	-0.07	65.38	14.33	76.33	14.26	54.62
YDR256C	1.03	1.15	1.13	1.11	1.08	206.85	183.73	199.22	169.52	406.07	353.24	520.81
YDR258C	1.01	1.77	2.05	2.31	2.37	17.35	0.35	85.06	17.11	102.41	17.47	95.65
YDR259C	0.88	1.45	1.82	2.15	2.16	22.69	2.03	70.62	22.82	93.31	24.85	108.13
YDR261C	0.93	1.30	1.64	2.18	2.25	26.73	2.86	111.15	27.42	137.87	30.29	105.88
YDR261W-A	0.92	1.41	1.72	2.05	2.10	27.17	2.36	77.92	25.84	105.09	28.20	142.03
YDR262W	0.88	1.13	1.45	2.01	2.08	30.82	3.64	96.73	29.35	127.55	32.98	104.51
YDR263C	0.98	1.78	2.06	2.30	2.35	13.38	1.07	75.40	17.96	88.78	19.03	85.26
YDR265W	0.85	1.03	1.32	1.88	2.00	24.42	2.75	106.36	30.40	130.79	33.15	101.65
YDR270W	0.87	1.22	2.00	1.96	2.05	14.99	2.44	73.36	24.15	88.35	26.59	101.62
YDR273W	0.86	1.30	1.67	2.11	2.16	24.30	2.71	89.95	17.74	114.25	20.45	107.81
YDR276C	0.87	1.05	1.28	1.77	1.88	28.85	4.19	110.58	34.63	139.42	38.82	160.61
YDR277C	0.87	1.05	1.25	1.69	1.76	30.87	3.96	95.65	30.44	126.52	34.40	114.75
YDR279W	0.90	1.29	1.61	2.05	2.12	22.91	2.61	100.62	24.86	123.53	27.47	100.14

	Optical density at 600 nm at time intervals (h)					GLUCOSE		FRUCTOSE		TOTAL Sugars(g/L)		TOTAL AMINO ACIDS (mg/L)
ORF	0	20	27	42	67	43 h	67 h	43 h	67 h	43 h	67 h	48 h
YDR281C	0.89	1.18	1.49	1.97	2.04	27.34	3.36	93.20	29.41	120.55	32.78	113.00
YDR283C	0.90	1.12	1.40	1.92	2.00	23.00	3.11	87.30	25.61	110.30	28.72	104.23
YDR284C	0.89	1.21	1.49	1.96	2.03	26.89	3.57	93.11	25.45	120.00	29.02	72.26
YDR285W	0.96	1.42	1.76	2.15	2.22	28.53	4.12	107.81	35.82	136.33	39.94	130.08
YDR291W	1.00	1.83	2.09	2.32	2.37	16.17	0.48	72.26	21.96	88.43	22.45	90.15
YDR296W	0.94	1.70	1.98	2.24	2.29	15.22	1.87	76.66	19.36	91.88	21.23	79.53
YDR297W	0.88	1.13	1.47	2.00	2.09	30.92	3.68	100.30	27.06	131.22	30.74	104.99
YDR298C	0.97	1.06	1.04	0.98	0.98	207.77	175.47	194.06	166.30	401.84	341.78	526.16
YDR304C	0.95	1.04	1.02	0.98	0.97	180.10	174.81	187.77	168.83	367.87	343.65	522.67
YDR305C	0.94	1.51	1.79	2.14	2.25	17.69	0.74	78.09	25.04	95.78	25.78	-1.53
YDR306C	0.90	1.18	1.56	2.10	2.18	29.42	3.31	101.95	30.05	131.37	33.37	109.80
YDR307W	0.94	1.63	1.86	2.13	2.28	15.27	0.17	70.18	17.40	85.45	17.57	79.53
YDR309C	0.91	1.28	1.67	2.15	2.23	29.78	3.32	102.38	30.67	132.16	33.99	98.59
YDR312W	0.96	1.43	1.81	2.18	2.27	20.25	2.73	72.28	19.34	92.54	22.07	114.24
YDR313C	0.88	1.37	1.68	2.06	2.22	15.75	0.24	69.86	18.86	85.61	19.09	130.58
YDR318W	0.87	1.22	1.48	1.90	2.11	24.83	0.87	90.10	28.83	114.93	29.69	99.97
YDR320C	1.06	1.91	2.14	2.31	2.41	10.49	3.09	66.20	8.22	76.69	11.31	87.09
YDR321W	1.09	1.80	2.05	2.28	2.39	22.27	1.90	87.11	34.43	109.38	36.33	124.84
YDR326C	1.00	1.81	2.07	2.31	2.36	13.92	0.44	75.78	18.75	89.70	19.19	99.44
YDR329C	0.93	1.49	1.86	2.22	2.31	27.49	3.03	105.04	20.92	132.53	23.95	101.45
YDR330W	0.86	1.22	1.57	2.03	2.13	22.95	2.91	74.32	21.01	97.27	23.92	106.09
YDR332W	0.86	1.15	1.45	1.96	2.07	20.42	2.36	83.20	21.11	103.62	23.46	224.93
YDR333C	0.96	1.27	1.61	2.10	2.20	36.06	4.26	112.64	32.87	148.69	37.13	190.14
YDR336W	0.87	1.07	1.34	1.85	1.96	27.17	2.52	114.44	24.13	141.61	26.65	99.11
YDR342C	0.90	1.62	1.99	2.24	2.34	25.51	2.96	82.95	22.38	108.47	25.34	103.58
YDR343C	0.89	1.62	2.01	2.24	2.38	23.97	2.96	73.49	19.65	97.47	22.61	130.51
YDR345C	0.87	1.08	1.37	1.93	2.02	20.32	4.03	67.77	27.86	88.10	31.89	147.96
YDR351W	0.88	1.11	1.43	1.97	2.06	26.71	2.67	110.46	22.32	137.17	24.99	277.40
YDR354W	1.00	1.59	1.73	2.03	2.22	26.34	3.37	92.27	38.43	118.61	41.81	176.00
YDR357C	1.01	1.71	1.99	2.29	2.39	23.25	1.18	88.22	26.67	111.48	27.85	100.91
YDR358W	1.04	1.49	1.71	2.08	2.16	11.04	1.33	56.86	10.51	67.89	11.83	86.48
YDR359C	1.01	1.21	1.45	1.91	2.09	45.40	9.51	89.56	54.68	134.96	64.19	240.35
YDR363W	0.96	1.06	1.03	1.03	0.99	170.36	152.86	180.77	154.47	351.13	307.33	521.17
YDR363W-A	1.03	1.55	1.81	2.19	2.26	11.86	2.16	58.05	17.79	69.91	19.95	195.01
YDR364C	0.98	1.61	1.90	2.25	2.34	22.52	1.63	94.58	31.81	117.10	33.44	124.84
YDR368W	0.96	1.50	1.73	2.14	2.22	11.06	1.61	47.70	6.09	58.76	7.70	288.28
YDR370C	0.98	1.61	1.94	2.29	2.32	16.27	1.82	65.87	15.22	82.15	17.04	181.55
YDR372C	0.92	1.50	1.82	2.16	2.27	17.07	0.40	74.37	21.26	91.44	21.67	98.49
YDR375C	0.96	1.50	1.82	2.16	2.25	16.42	0.50	70.80	19.79	87.22	20.29	116.26
YDR377W	0.90	1.49	1.90	2.14	2.33	22.57	2.99	69.77	25.96	92.34	28.95	131.51
YDR378C	0.97	1.61	1.90	2.21	2.28	18.98	1.33	75.34	28.54	94.32	29.87	137.41
YDR379C-A	0.97	1.74	2.04	2.30	2.33	20.16	0.84	76.83	20.56	96.99	21.41	164.24
YDR379W	0.93	1.44	1.78	2.19	2.23	20.04	2.25	62.35	14.81	82.39	17.07	277.84
YDR382W	0.93	1.11	1.29	1.95	2.23	60.69	14.45	121.14	76.69	181.84	91.14	175.21
YDR383C	1.04	1.60	1.87	2.27	2.33	20.86	2.00	69.06	17.19	89.92	19.20	245.56
YDR385W	1.01	1.39	2.08	2.65	2.20	27.63	5.27	68.23	33.56	95.87	38.83	278.51
YDR386W	1.05	1.50	1.77	2.19	2.32	26.34	4.24	65.78	32.48	92.12	36.73	394.64
YDR388W	0.97	1.41	1.68	2.18	2.28	22.25	2.61	64.16	18.31	86.41	20.93	384.09
YDR389W	1.00	1.36	1.82	2.31	2.37	38.37	9.57	110.90	48.02	149.27	57.59	264.62
YDR391C	0.99	1.43	1.80	2.27	2.34	38.60	5.27	89.93	32.92	128.53	38.19	280.44
YDR392W	1.10	1.66	1.88	2.27	2.33	17.24	1.78	59.53	12.09	76.77	13.87	104.95
YDR393W	1.04	1.67	1.98	2.26	2.35	18.87	1.22	69.92	26.45	88.79	27.67	201.18
YDR405W	0.94	1.58	1.89	2.22	2.29	18.34	1.29	68.95	21.55	87.30	22.84	296.17
YDR408C	1.02	1.22	1.23	1.35	1.51	140.79	151.67	143.81	156.48	284.60	308.14	483.79
YDR409W	0.88	1.44	1.79	2.02	2.13	26.39	2.90	75.29	24.83	101.68	27.73	118.24
YDR411C	1.05	1.14	1.11	1.12	1.09	149.72	182.13	151.60	157.47	301.32	339.60	519.14
YDR415C	1.00	1.58	1.95	2.29	2.35	28.14	3.75	79.79	35.44	107.93	39.18	270.76
YDR419W	0.97	1.07	1.03	1.01	0.98	142.48	167.63	141.14	160.18	283.62	327.80	514.07
YDR420W	0.86	1.31	1.78	1.90	2.23	26.29	2.76	80.76	23.85	107.05	26.61	97.87
YDR423C	0.92	1.65	1.88	2.11	2.24	17.51	1.75	67.46	16.88	84.97	18.64	97.03
YDR424C	0.98	1.40	1.75	2.16	2.28	30.63	3.37	79.29	35.72	109.93	39.09	311.67
YDR425W	0.96	1.06	1.02	1.00	0.98	146.43	186.56	149.93	168.01	296.36	354.57	516.65
YDR428C	1.02	1.67	1.98	2.29	2.35	19.13	1.05	77.10	24.73	96.22	25.78	79.43
YDR436W	0.95	1.65	1.89	2.13	2.28	18.36	2.46	73.27	19.71	91.63	22.16	106.55
YDR438W	0.96	1.60	1.88	2.20	2.26	17.35	1.68	70.07	23.63	87.41	25.32	94.90
YDR444W	0.96	1.64	1.94	2.26	2.31	17.25	2.40	68.31	27.08	85.56	29.48	159.05
YDR448W	1.03	1.12	1.09	1.11	1.06	156.88	176.79	155.52	154.91	312.40	331.70	523.85
YDR452W	1.00	1.61	1.90	2.24	2.34	19.63	2.63	65.94	30.19	85.57	32.82	109.70
YDR458C	0.97	1.06	1.02	1.03	0.98	158.11	207.92	142.40	160.59	300.51	368.51	524.11
YDR459C	1.02	1.63	1.92	2.28	2.35	25.21	2.87	78.38	29.27	103.60	32.15	142.17
YDR462W	1.05	1.56	1.87	2.24	2.31	26.23	3.18	73.55	26.69	99.78	29.87	141.62
YDR469W	1.03	1.64	1.98	2.28	2.36	23.32	3.18	71.85	34.86	95.17	38.04	166.77
YDR470C	0.96	1.49	1.96	2.21	2.31	29.23	4.11	83.74	45.60	112.97	49.72	118.16
YDR477W	0.94	1.57	1.86	2.20	2.28	23.16	1.52	72.00	28.95	95.16	30.47	96.88
YDR479C	0.91	1.40	1.74	2.12	2.23	27.53	2.81	80.43	32.04	107.97	34.86	149.23
YDR482C	0.97	1.94	2.82	2.20	2.28	19.13	1.20	70.56	23.87	89.69	25.07	84.58
YDR485C	0.98	1.57	1.84	2.18	2.26	36.86	8.68	97.98	51.08	134.84	59.76	149.20
YDR486C	1.07	1.65	1.93	2.28	2.36	11.38	2.29	49.28	8.97	60.66	11.26	266.45
YDR488C	0.93	1.31	1.51	1.90	2.02	34.39	5.29	100.85	49.19	135.23	54.48	262.53
YDR493W	1.02	1.77	2.05	2.34	2.37	17.54	2.33	71.06	20.53	88.61	22.86	141.24
YDR494W	0.98	1.64	1.93	2.24	2.30	18.46	1.70	70.86	19.95	89.32	21.65	130.82
YDR495C	0.99	1.10	1.07	1.07	1.02	161.43	180.20	169.20	153.24	330.63	333.44	530.51
YDR516C	1.06	1.92	2.16	2.39	2.43	23.49	2.36	74.55	22.45	98.03	24.81	244.50
YDR517W	0.98	1.63	1.96	2.28	2.33	18.67	2.51	73.61	26.11	92.28	28.62	192.64
YDR524C	0.98	1.57	1.96	2.48	2.39	24.29	1.96	82.48	23.99	106.77	25.95	117.45
YDR529C	1.00	1.57	1.87	2.23	2.31	25.13	2.48	84.45	28.41	109.58	30.89	75.66
YDR533C	0.95	1.52	1.88	2.24	2.33	18.58	2.23	76.22	26.94	94.80	29.17	114.70
YDR536W	0.94	1.35	1.67	2.10	2.21	25.39	3.07	83.30	31.88	108.70	34.95	52.72
YDR538W	1.02	1.58	1.95	2.29	2.35	31.70	1.70	106.97	26.92	138.66	28.62	97.55
YDR539W	1.02	1.70	2.01	2.22	2.31	16.62	1.36	72.23	20.19	88.85	21.55	87.20
YDR540C	0.97	1.73	1.99	2.26	2.29	10.86	1.41	60.23	16.13	71.09	17.54	87.46
YDR541C	0.98	1.63	1.92	2.23	2.27	17.82	2.28	75.43	23.98	93.24	26.26	130.33
YEL001C	0.98	1.60	1.92	2.26	2.31	21.50	2.32	76.71	23.58	98.21	25.90	149.85
YEL003W	1.00	1.62	1.95	2.28	2.34	20.69	2.65	76.92	24.41	97.61	27.06	210.19
YEL005C	0.98	1.48	1.79	2.19	2.27	28.87	4.25	95.49	33.87	124.36	38.12	198.50
YEL007W	1.01	1.58	1.88	2.21	2.29	10.53	0.84	56.33	9.25	66.86	10.08	257.56
YEL011W	1.02	1.89	1.89	2.08	2.17	21.38	1.47	91.18	20.06	112.56	21.53	176.37
YEL012W	0.98	1.86	1.84	2.11	2.20	17.16	1.73	62.28	10.33	79.44	12.06	296.53
YEL017C-A	1.06	1.75	2.02	2.32	2.36	17.08	1.87	58.21	16.12	75.29	17.99	187.65
YEL017W	0.95	1.59	1.88	2.21	2.26	21.15	1.24	91.59	16.65	112.75	17.89	96.43
YEL018W	0.98	1.65	1.96	2.29	2.34	21.75	1.85	79.94	21.32	101.68	23.17	128.97
YEL025C	0.97	1.65	1.93	2.25	2.30	24.39	0.90	96.16	16.23	120.55	17.14	132.28
YEL027W	1.03	1.74	2.00	2.33	2.36	18.80	2.25	58.96	13.51	77.77	15.75	200.78
YEL039C	0.94	1.63	1.92	2.22	2.27	18.60	1.53	73.99	16.95	92.59	18.48	165.36
YEL041W	0.97	1.07	1.03	1.05	1.00	160.83	201.54	168.35	178.61	329.18	380.14	525.40
YEL048C	0.99	1.58	1.83	2.20	2.25	19.65	2.57	66.81	14.97	86.46	17.54	178.49
YEL051W	1.02	1.12	1.08	1.10	1.05	157.80	177.30	161.41	172.05	319.21	349.35	525.07
YEL052W	1.07	1.78	2.08	2.36	2.41	17.77	2.57	69.19	24.66	86.95	27.23	94.92
YEL053C	1.02	1.45	1.72	2.13	2.23	45.95	14.39	112.30	60.10	158.25	74.49	191.16
YEL054C	1.06	1.33	1.56	2.11	2.35	49.33	8.70	117.13	48.80	166.46	57.50	152.71
YER002W	1.04	1.64	1.98	2.30	2.37	23.31	1.86	78.38	19.92	101.69	21.78	134.09
YER004W	1.09	1.78	2.07	2.40	2.43	17.54	3.08	58.46	19.11	76.00	22.19	233.87
YER019C-A	0.99	1.49	1.81	2.22	2.31	30.07	2.68	103.45	28.88	133.52	31.56	127.70
YER030W	1.01	1.73	2.02	2.29	2.34	18.88	0.25	94.14	14.08	113.02	14.33	78.83
YER033C	0.98	1.66	1.96	2.26	2.30	18.38	1.65	80.58	19.54	98.96	21.18	106.86
YER034W	1.01	1.74	2.02	2.31	2.34	21.43	1.59	90.04	18.57	111.47	20.16	89.86
YER037W	0.97	1.05	1.01	1.03	0.98	161.73	207.20	164.51	175.61	326.24	382.81	527.31
YER039C	0.94	1.58	1.85	2.04	2.15	23.85	1.31	97.54	16.41	121.39	17.72	101.64
YER041W	0.91	1.60	1.85	2.19	2.24	23.68	1.48	87.23	15.43	110.91	16.91	88.88
YER044C	0.95	1.28	1.57	2.10	2.25	57.78	4.74	126.74	35.33	184.51	40.07	172.27
YER044C-A	1.04	1.73	2.03	2.33	2.38	27.35	2.20	96.04	27.50	123.40	29.70	113.55
YER046W	0.96	1.46	1.75	2.15	2.23	31.34	2.43	113.97	24.68	145.31	27.11	159.70
YER047C	1.10	1.73	2.02	2.35	2.43	24.77	1.72	90.86	19.93	115.63	21.66	95.40
YER048C	1.00	1.48	1.78	2.16	2.26	20.42	1.14	80.73	16.86	101.15	18.00	102.20
YER049W	1.01	1.49	1.82	2.22	2.32	31.37	1.80	107.90	21.96	139.27	23.76	32.23
YER050C	0.96	1.62	1.92	2.22	2.28	16.63	0.85	79.97	15.82	96.60	16.67	87.49
YER051W	1.01	1.82	2.10	2.35	2.38	23.59	1.65	97.89	17.15	121.48	18.80	92.37
YER051W	0.89	1.46	1.77	2.11	2.21	20.68	2.06	83.52	19.22	104.20	21.28	128.43
YER052C	1.01	1.09	1.07	1.08	1.03	171.65	191.63	176.20	175.14	347.85	366.77	524.08
YER054C	0.99	1.67	1.96	2.26	2.30	25.97	2.09	101.43	19.72	127.40	21.80	93.52
YER057C	0.97	1.67	1.96	2.27	2.33	24.88	1.55	99.91	18.53	124.79	20.08	101.69
YER060W-A	0.88	1.48	1.85	2.06	2.15	20.13	1.80	68.36	15.19	88.49	16.98	305.22
YER060W-A	1.03	1.04	1.03	1.12	1.05	145.29	118.26	200.46	154.34	345.74	272.60	516.69
YER064C	0.94	1.53	1.84	2.18	2.24	29.34	1.58	111.13	21.68	140.47	23.26	100.48
YER066W	0.97	1.58	1.87	2.23	2.28	24.21	1.37	94.43	19.45	118.64	20.82	95.59

ORF	Optical density at 600 nm at time intervals (h)					GLUCOSE		FRUCTOSE		TOTAL Sugars(g/L)		TOTAL AMINO ACIDS (mg/L)
	0	20	27	42	67	43 h	67 h	43 h	67 h	43 h	67 h	48 h
YER072W	1.02	1.58	1.88	2.30	2.33	23.01	2.90	61.69	17.19	84.70	20.09	148.84
YER075C	1.12	1.65	1.98	2.36	2.43	24.45	5.63	71.39	38.87	95.84	44.50	52.42
YER080W	1.00	1.63	1.95	2.30	2.35	26.77	1.47	102.49	19.29	129.25	20.76	93.87
YER081W	1.02	1.58	1.87	2.24	2.32	21.86	2.14	66.45	16.80	88.31	18.94	270.33
YER083C	0.98	1.24	1.48	1.94	2.08	37.44	4.27	106.48	30.42	143.92	34.69	301.32
YER085C	1.02	1.62	1.92	2.28	2.34	23.89	1.88	96.63	21.57	120.52	23.45	110.57
YER089C	1.04	1.62	1.88	2.27	2.31	14.96	1.37	52.46	7.37	67.42	8.75	295.77
YER090W	1.02	1.62	1.95	2.28	2.35	27.88	1.64	105.50	20.63	133.38	22.27	94.98
YER099C	0.98	1.49	1.79	2.18	2.27	30.83	1.65	105.33	20.56	136.16	22.22	101.41
YER115C	0.92	1.03	0.99	0.96	0.93	163.53	187.40	171.69	177.78	335.22	365.18	517.05
YER116C	1.01	1.37	1.61	1.99	2.23	66.03	11.94	131.42	66.04	197.45	77.98	226.91
YER118C	1.06	1.55	1.80	2.17	2.22	13.98	1.75	52.83	9.87	66.80	11.61	188.49
YER119C	1.08	1.81	2.09	2.34	2.39	23.07	0.80	101.81	15.66	124.89	16.46	90.65
YER122C	1.07	1.92	2.17	2.39	2.42	24.17	1.28	102.02	18.64	126.19	19.93	144.32
YER123W	1.05	1.63	1.83	2.24	2.31	21.06	2.63	68.80	20.37	89.86	23.00	221.93
YER124C	1.06	1.88	2.16	2.38	2.42	24.37	1.13	100.82	21.08	125.19	22.22	111.26
YER128W	1.02	1.66	1.96	2.29	2.35	24.48	1.33	102.34	20.94	126.82	22.28	87.42
YER129W	1.03	1.70	1.96	2.29	2.32	17.90	2.28	58.64	13.71	76.55	15.99	322.22
YER134C	0.99	1.56	1.88	2.22	2.29	27.77	1.10	98.88	19.86	126.66	20.96	89.83
YER137C	0.98	1.50	1.85	1.92	2.02	17.15	1.71	73.59	13.67	90.73	15.38	197.28
YER144C	1.06	1.81	2.06	2.34	2.37	28.36	2.55	84.89	18.43	113.25	20.97	262.87
YER145C	1.06	1.55	1.84	2.21	2.25	22.70	2.39	71.02	19.69	93.72	22.08	329.15
YER150W	1.00	1.66	1.98	2.31	2.34	19.25	2.71	63.70	18.13	82.95	20.84	224.07
YER151C	1.02	1.68	1.99	2.29	2.36	28.96	1.66	110.45	23.87	139.41	25.53	102.26
YER152C	1.05	1.67	1.99	2.33	2.37	20.24	2.19	72.58	18.20	92.82	20.39	220.36
YER153C	1.02	1.52	1.84	2.26	2.32	25.46	2.94	72.47	23.49	97.93	26.43	248.00
YER155C	0.98	1.59	1.84	2.22	2.29	16.76	1.93	68.69	13.23	85.45	15.16	178.11
YER156C	0.99	1.55	2.08	2.26	2.34	24.15	2.04	76.88	15.41	101.04	17.45	189.39
YER161C	1.17	1.96	2.18	2.44	2.48	14.77	1.58	61.55	12.16	76.32	13.74	143.44
YER162C	1.02	1.68	1.95	2.30	2.34	16.97	2.25	70.11	19.55	87.08	21.80	256.29
YER163C	1.05	1.63	1.94	2.31	2.41	30.86	1.39	105.88	23.53	136.75	24.92	96.29
YER164W	1.05	1.83	2.08	2.39	2.42	18.93	2.00	68.60	15.77	87.52	17.78	125.46
YER166W	1.06	1.82	2.07	2.36	2.39	14.82	1.91	64.32	16.41	79.13	18.32	183.53
YER167W	1.03	1.77	1.81	2.28	2.23	19.52	2.26	64.64	16.89	84.15	19.15	111.50
YER174C	0.96	1.63	1.90	2.19	2.26	13.69	-0.29	68.90	10.09	82.58	9.80	137.37
YER180C	0.94	1.05	1.00	0.99	0.95	137.58	184.80	145.07	170.33	282.64	355.13	513.81
YER180C-A	0.93	1.08	1.10	0.93	1.00	167.12	177.18	167.25	163.08	334.37	340.26	519.66
YER180C-A	0.96	1.06	1.02	1.01	0.97	166.42	210.94	165.42	169.95	331.85	380.89	515.91
YER183C	0.98	1.72	2.01	2.27	2.32	17.94	0.47	73.14	15.52	91.08	15.98	96.81
YER184C	1.01	1.54	1.76	2.14	2.19	15.45	1.87	62.62	13.25	78.08	15.13	226.95
YER185W	0.97	1.67	1.92	2.22	2.29	12.40	0.30	62.92	15.26	75.32	15.56	76.13
YFL007W	0.92	1.58	1.88	2.18	2.25	23.64	1.32	82.95	16.97	106.60	18.29	101.96
YFL010W-A	0.96	1.62	1.90	2.21	2.28	19.54	0.89	69.39	18.30	88.94	19.19	116.43
YFL011W	1.03	1.51	1.77	2.19	2.24	24.69	3.07	73.34	22.80	98.03	25.87	249.33
YFL012W	0.93	1.59	1.89	2.20	2.26	21.03	2.80	69.51	30.69	90.54	33.49	168.86
YFL019C	0.98	1.37	1.61	2.05	2.10	16.93	2.22	68.55	18.31	85.48	20.53	121.15
YFL020C	1.08	1.54	1.73	2.12	2.18	13.87	2.03	55.35	20.24	69.21	22.27	170.15
YFL021W	1.03	1.64	1.87	2.24	2.28	19.96	2.26	69.74	19.02	89.70	21.28	141.57
YFL023W	0.99	1.42	1.75	2.17	2.27	22.59	2.03	77.96	19.39	100.55	21.42	342.01
YFL026W	0.94	1.04	1.00	0.99	0.95	141.55	208.94	139.01	163.25	280.56	372.19	520.71
YFL031W	1.01	1.62	1.81	2.10	2.13	34.95	5.29	89.08	37.45	124.03	42.74	131.79
YFL036W	0.91	1.01	0.97	0.96	0.92	138.05	194.09	143.05	166.05	281.09	360.14	518.32
YFL040W	0.92	1.40	1.69	2.07	2.16	23.27	0.69	76.01	22.68	99.28	23.37	93.87
YFL042C	0.94	1.49	1.80	2.19	2.21	15.61	2.69	73.59	18.02	89.20	20.70	219.64
YFL044C	1.01	1.58	1.84	2.21	2.26	19.52	2.66	69.12	17.86	88.64	20.52	201.75
YFL047W	1.03	1.57	1.85	2.24	2.28	17.48	2.17	69.24	16.23	86.72	18.40	203.07
YFL048C	0.92	1.48	1.78	2.15	2.22	17.62	7.22	68.05	26.58	85.66	33.80	136.63
YFL049W	0.97	1.59	1.84	2.12	2.22	18.14	0.92	64.09	15.48	82.23	16.40	191.28
YFL050C	1.00	1.49	1.72	2.15	2.19	21.61	2.69	70.02	17.10	91.63	19.79	244.05
YFL051C	0.93	1.76	1.91	1.99	2.15	15.59	0.73	64.27	12.10	79.86	12.83	102.48
YFL052W	1.03	1.61	1.92	2.28	2.32	19.66	2.21	71.00	17.31	90.66	19.51	212.28
YFL053W	0.93	2.32	1.94	1.72	1.72	12.53	0.89	59.67	12.16	72.20	13.04	220.19
YFL055W	0.99	1.47	1.73	2.17	2.22	23.46	2.50	76.27	19.96	99.73	22.47	191.91
YFR001W	1.00	1.35	1.61	2.10	2.24	31.03	1.95	83.74	23.29	114.78	25.24	114.08
YFR007W	0.94	1.48	1.70	2.02	2.11	17.77	1.28	65.35	15.05	83.12	16.33	111.25
YFR008W	0.98	1.47	1.76	2.23	2.29	21.99	2.70	84.00	28.09	106.00	30.79	167.97
YFR009W	0.96	1.63	1.92	2.22	2.28	18.78	1.52	64.68	17.94	83.46	19.46	95.16
YFR010W	0.98	1.54	1.79	2.13	2.21	19.32	0.84	69.10	11.26	88.42	12.10	221.27
YFR011C	0.96	1.80	2.02	2.24	2.27	13.80	0.25	65.21	2.46	79.01	2.71	253.86
YFR012W	0.99	1.11	1.06	1.06	1.01	143.41	247.78	135.49	166.59	278.90	414.37	519.56
YFR014C	0.96	1.34	1.56	1.96	2.01	23.54	2.59	74.32	22.73	97.86	25.32	285.71
YFR016C	1.08	1.77	2.04	2.35	2.38	23.16	1.62	87.34	11.17	110.50	12.80	202.90
YFR017C	0.91	1.33	1.54	1.89	1.96	17.77	0.88	70.65	14.13	88.43	15.01	93.30
YFR024C-A	1.04	1.74	1.98	2.30	2.33	15.03	1.50	66.74	13.44	81.78	14.94	152.26
YFR030W	0.88	1.38	1.65	2.01	2.11	18.61	0.80	67.81	14.58	86.42	15.38	94.42
YFR031C-A	1.06	1.59	1.90	2.31	2.36	27.03	2.37	85.51	22.36	112.54	24.73	116.97
YFR032C	0.86	0.96	0.92	0.90	0.87	146.54	179.96	137.78	155.33	284.31	335.29	520.00
YFR032C-A	0.99	1.50	1.75	2.16	2.22	25.16	1.41	82.95	19.65	108.12	21.05	147.17
YFR033C	0.96	1.62	1.88	2.17	2.25	14.86	0.65	65.53	11.64	80.38	12.29	151.28
YFR036W	0.97	1.45	1.69	2.02	2.11	31.97	3.62	94.55	35.69	126.52	39.30	107.62
YFR038W	1.07	1.77	2.41	2.43	2.38	16.64	2.08	61.82	16.83	78.47	18.90	216.20
YFR040W	0.99	1.56	1.83	2.23	2.26	26.45	4.87	75.05	36.62	101.50	41.49	192.96
YFR041C	0.98	1.69	1.95	2.25	2.30	16.83	1.04	68.66	17.62	85.49	18.66	161.61
YFR043C	0.92	1.48	1.75	2.08	2.14	16.61	2.34	68.63	13.15	85.24	15.48	171.97
YFR044C	0.96	1.55	1.87	2.24	2.26	18.07	2.07	60.93	16.94	79.00	19.01	122.06
YFR045W	1.00	1.68	1.92	2.23	2.30	15.36	2.02	70.30	16.16	85.66	18.18	174.12
YFR046C	1.04	1.68	1.95	2.29	2.32	19.86	2.67	66.42	17.81	86.28	20.48	266.31
YFR047C	0.99	1.48	1.79	2.21	2.24	12.92	1.18	60.47	9.50	73.39	10.68	74.87
YFR048W	0.94	1.44	1.62	1.99	2.09	24.98	1.91	81.93	24.78	106.91	26.70	156.66
YFR053C	1.06	1.73	2.04	2.34	2.36	26.76	3.82	107.37	73.24	134.13	77.06	184.04
YFR055W	1.04	1.64	1.97	2.35	2.38	19.44	2.59	75.85	24.04	95.29	26.63	253.12
YFR056C	1.04	1.62	1.93	2.29	2.35	21.55	1.90	78.83	16.48	100.38	18.38	171.68
YGL007C-A	0.96	1.20	1.23	1.34	1.42	122.97	190.55	146.06	189.15	269.04	379.70	444.56
YGL009C	0.96	1.61	1.86	2.18	2.26	17.94	1.43	71.24	17.74	89.18	19.17	133.40
YGL010W	0.91	1.27	1.43	1.75	1.83	20.30	1.74	79.82	23.60	100.12	25.34	165.48
YGL013C	0.98	1.63	1.88	2.23	2.29	17.07	1.40	80.94	11.52	98.01	12.92	243.33
YGL015C	1.09	1.79	2.06	2.36	2.40	16.01	1.58	80.13	16.05	96.15	17.62	216.17
YGL016W	0.87	1.60	1.84	2.07	2.14	11.03	0.18	60.75	5.12	71.79	5.30	46.72
YGL017W	0.88	1.41	1.72	2.08	2.17	18.39	1.57	75.25	16.86	93.64	18.44	138.54
YGL019W	0.98	1.46	1.69	2.07	2.13	33.04	4.44	94.26	36.88	127.29	41.32	205.49
YGL020C	0.99	1.61	1.84	2.14	2.22	19.09	0.84	86.96	12.93	106.06	13.77	124.09
YGL023C	0.98	1.65	1.99	2.19	2.26	24.21	2.84	77.15	24.05	101.36	26.89	137.58
YGL026C	0.94	1.56	1.82	2.13	2.19	16.30	1.03	73.84	14.11	90.14	15.15	126.41
YGL027C	1.01	1.60	1.90	2.10	2.17	21.30	1.49	97.51	10.76	118.81	12.25	126.92
YGL028C	0.98	1.45	1.66	2.08	2.12	19.66	2.51	69.15	18.86	88.81	21.37	181.98
YGL031C	0.95	1.53	1.81	2.15	2.22	21.23	1.44	75.37	18.32	96.60	19.75	182.13
YGL032C	0.98	1.54	1.82	2.09	2.17	13.83	1.31	66.00	15.43	79.82	16.73	146.71
YGL037C	0.92	1.45	1.72	2.02	2.11	16.57	1.49	66.03	14.29	82.60	15.78	289.08
YGL053W	0.98	1.47	1.75	2.14	2.19	20.08	1.87	89.61	19.57	109.69	21.44	201.04
YGL057C	0.94	1.46	1.78	2.17	2.22	22.06	3.13	72.35	26.76	94.41	29.89	206.82
YGL059W	1.02	1.56	1.86	2.24	2.29	18.24	2.36	70.98	22.07	89.22	24.42	225.12
YGL060W	0.95	1.49	1.71	2.03	2.10	17.40	2.18	72.97	17.58	90.37	19.76	202.07
YGL063W	0.95	1.43	1.66	2.04	2.13	28.44	2.00	102.46	19.90	130.90	21.90	137.84
YGL064C	0.96	1.60	1.72	2.01	2.10	13.27	0.43	67.55	9.84	80.82	10.27	115.23
YGL066W	0.92	1.45	1.68	2.02	2.12	16.91	0.98	74.72	13.95	91.63	14.93	168.50
YGL077C	0.99	1.47	1.77	2.21	2.26	27.72	3.06	82.40	27.26	110.12	30.32	262.60
YGL078C	1.05	1.51	1.82	2.27	2.34	29.54	3.28	94.28	29.62	123.82	32.90	257.56
YGL079W	0.98	1.84	2.04	2.26	2.31	12.67	0.66	65.47	9.64	78.14	10.31	111.35
YGL080W	0.95	1.80	2.02	2.24	2.28	9.71	0.30	58.67	5.17	68.38	5.47	187.65
YGL082W	0.92	1.49	1.74	2.06	2.13	16.68	1.21	72.64	14.06	89.33	15.27	238.34
YGL084C	0.92	1.51	1.75	2.08	2.15	17.79	1.26	75.02	16.52	92.80	17.78	169.09
YGL086W	0.92	1.37	1.52	1.82	1.93	15.40	1.06	69.04	14.24	84.44	15.30	136.63
YGL087C	0.95	1.53	1.77	2.11	2.20	12.39	0.45	60.99	7.90	73.38	8.35	205.13
YGL089C	0.97	1.48	1.81	2.23	2.28	21.82	2.66	69.40	23.39	91.22	26.05	249.14
YGL090W	0.94	1.52	1.76	2.09	2.18	24.65	1.75	96.92	18.01	121.57	19.77	133.52
YGL096W	1.01	1.53	1.84	2.26	2.32	26.75	2.77	96.22	26.05	122.98	28.82	269.56
YGL100W	0.92	1.03	0.98	0.96	0.92	174.28	226.72	187.77	185.79	362.05	412.51	520.31
YGL108C	0.88	1.34	1.62	1.99	2.09	24.34	1.16	90.98	14.33	115.31	15.49	123.76
YGL114W	0.85	1.30	1.58	1.93	2.04	25.07	0.82	105.68	13.95	130.75	14.77	80.24
YGL117W	0.96	1.52	1.86	2.27	2.31	22.09	1.59	75.24	14.51	97.32	16.10	100.95
YGL119W	0.97	1.68	2.32	1.93	2.07	14.48	0.44	76.51	11.91	90.99	12.35	120.15
YGL121C	1.05	1.68	1.93	2.26	2.32	21.10	2.00	71.76	16.62	92.86	18.62	187.89
YGL127C	0.98	1.61	1.85	2.14	2.22	20.70	0.87	94.17	15.12	114.87	15.99	146.60
YGL128C	0.92	1.43	1.62	1.95	2.13	23.39	3.12	85.57	27.02	108.96	30.14	103.70
YGL129C	0.97	1.77	1.99	2.20	2.25	13.82	0.44	78.38	12.55	92.21	12.99	144.82

ORF	Optical density at 600 nm at time intervals (h)					GLUCOSE		FRUCTOSE		TOTAL Sugars(g/L)		TOTAL AMINO ACIDS (mg/L)
	0	20	27	42	67	43 h	67 h	43 h	67 h	43 h	67 h	48 h
YGL131C	0.96	1.47	1.76	2.18	2.22	17.69	1.75	68.00	11.74	85.69	13.49	179.66
YGL134W	0.97	1.68	1.92	2.21	2.26	21.86	1.18	86.14	15.73	108.01	16.91	141.58
YGL138C	0.94	1.55	1.79	2.10	2.19	21.38	0.99	92.71	14.29	114.09	15.28	116.68
YGL139W	0.94	1.55	1.79	2.13	2.21	19.08	0.61	73.32	6.21	92.40	6.82	256.91
YGL141W	0.95	1.55	2.10	2.43	2.38	23.52	1.95	78.50	16.90	102.02	18.85	61.88
YGL157W	1.11	1.79	2.06	2.35	2.40	22.67	2.43	82.42	23.26	105.09	25.69	194.11
YGL158W	0.96	1.65	1.59	2.03	2.12	19.70	1.56	82.43	15.68	102.12	17.24	144.42
YGL162W	0.95	1.45	1.70	2.07	2.15	24.19	1.52	92.06	18.08	116.25	19.61	160.41
YGL164C	0.89	1.30	1.52	1.86	1.96	22.16	1.42	95.02	15.89	117.18	17.31	148.30
YGL166W	1.02	1.42	1.66	1.98	2.09	36.18	5.55	111.79	58.64	147.97	64.19	489.23
YGL175C	0.87	1.18	1.41	1.87	2.02	35.24	1.55	113.94	18.55	149.18	20.10	127.64
YGL178W	1.10	1.76	2.07	2.35	2.42	16.77	1.80	67.96	11.54	84.73	13.34	332.81
YGL181W	1.00	1.50	1.73	2.18	2.26	22.89	1.90	86.31	22.07	109.21	23.96	185.62
YGL191W	0.85	1.27	1.56	1.92	2.04	23.69	0.61	103.72	12.19	127.40	12.81	147.07
YGL192W	1.01	1.59	1.87	2.25	2.32	28.38	2.90	85.97	24.04	114.35	26.94	185.35
YGL194C	1.03	1.58	1.94	2.28	2.33	43.26	6.91	118.98	48.75	162.23	55.66	177.22
YGL205W	0.99	1.51	1.86	2.25	2.33	33.85	0.62	113.76	14.67	147.61	15.29	108.44
YGL208W	0.97	1.62	1.90	2.07	2.23	18.36	0.26	90.16	14.11	108.52	14.37	113.98
YGL210W	0.93	1.49	1.73	2.03	2.09	30.17	2.34	105.71	24.53	135.88	26.87	149.42
YGL211W	0.98	1.54	1.79	2.12	2.22	31.40	1.19	113.73	19.75	145.14	20.95	82.81
YGL212W	0.95	1.46	1.68	2.01	2.09	22.96	0.50	95.14	18.17	118.09	18.68	143.58
YGL213C	0.92	1.34	1.51	1.88	2.02	26.84	1.15	103.51	14.38	130.35	15.53	172.11
YGL219C	0.95	1.64	1.89	2.19	2.25	22.13	1.04	94.43	14.24	116.56	15.28	119.62
YGL222C	0.96	1.61	1.85	2.15	2.22	22.87	1.32	90.51	13.92	113.37	15.24	144.15
YGL227W	0.97	1.44	1.75	2.20	2.29	38.14	0.45	142.23	13.92	180.37	14.36	220.02
YGL228W	0.95	1.56	1.82	2.12	2.18	43.92	5.71	122.28	39.31	166.21	45.02	180.28
YGL230C	0.92	1.32	1.55	1.98	2.13	41.26	1.26	137.75	17.74	179.00	19.00	169.16
YGL231C	0.94	1.70	1.94	2.17	2.21	14.83	0.82	83.48	9.68	98.31	10.50	196.78
YGL232W	0.93	1.40	1.67	2.02	2.15	25.73	1.18	98.42	15.98	124.15	17.17	160.97
YGL236C	0.87	1.31	1.58	1.94	2.06	26.42	1.05	104.01	16.07	130.43	17.12	113.38
YGL242C	0.88	1.38	1.73	2.06	2.15	22.50	0.29	98.15	10.58	120.65	10.86	164.14
YGL246C	0.98	1.67	1.95	2.20	2.27	16.87	-0.27	92.53	10.24	109.40	9.97	80.68
YGL248W	0.97	1.67	1.95	2.20	2.26	16.53	0.50	82.31	11.51	98.84	12.02	170.27
YGL249W	0.96	1.07	1.04	1.00	0.97	168.64	164.25	173.15	163.93	341.80	328.18	515.53
YGL251C	1.04	1.17	1.13	1.10	1.07	164.10	175.53	167.62	161.85	331.72	337.38	519.71
YGL252C	0.96	1.35	1.66	1.96	2.13	42.73	1.73	142.08	17.85	184.81	19.58	189.58
YGL253W	0.92	1.23	1.53	2.05	2.18	43.90	0.45	136.75	10.49	180.65	10.93	166.08
YGL257C	0.98	1.55	1.80	2.11	2.21	20.96	0.64	94.29	12.09	115.25	12.73	148.82
YGL261C	0.98	1.64	1.93	2.22	2.28	17.72	0.47	86.32	11.47	104.04	11.94	115.53
YGL262W	0.94	1.47	1.72	2.02	2.11	22.40	1.00	100.70	15.98	123.10	16.99	126.58
YGL263W	0.92	1.32	1.55	1.88	1.99	24.33	0.94	99.35	15.23	123.68	16.17	126.92
YGR004W	1.04	1.85	2.05	2.23	2.30	18.48	-0.26	94.84	12.73	113.32	12.47	65.83
YGR007W	1.02	1.75	2.00	2.27	2.36	23.59	0.54	99.91	16.92	123.50	17.46	209.98
YGR010W	0.98	1.09	1.05	1.03	0.99	157.71	162.18	161.91	150.44	319.61	312.63	515.21
YGR014W	0.93	1.44	1.79	2.20	2.26	32.80	0.73	125.36	6.21	158.16	6.94	98.15
YGR015C	0.96	1.69	1.99	2.25	2.32	23.41	0.49	100.29	12.70	123.70	13.19	175.24
YGR016W	0.93	1.65	1.95	2.21	2.27	14.24	-0.14	69.45	10.04	83.69	9.90	67.62
YGR017W	0.92	1.48	1.72	2.02	2.11	17.42	0.97	73.64	18.08	91.06	19.05	139.93
YGR019W	1.01	1.45	1.81	2.28	2.35	38.84	1.86	118.54	10.34	157.38	12.20	259.71
YGR021W	1.00	1.72	2.00	2.27	2.35	18.33	0.39	69.36	17.19	87.69	17.58	148.67
YGR023W	0.99	1.54	1.94	2.32	2.37	43.30	4.06	131.95	11.46	175.24	15.52	275.04
YGR027C	0.92	1.03	0.99	0.99	0.94	184.26	174.19	163.28	148.74	347.55	322.93	514.38
YGR028W	0.95	1.57	1.95	2.18	2.31	24.34	1.64	91.59	18.41	115.93	20.05	140.97
YGR031W	0.93	1.03	1.00	0.99	0.96	181.65	168.36	158.36	150.01	340.02	318.37	512.90
YGR032W	0.98	1.32	1.64	2.14	2.25	47.37	2.93	136.08	8.40	183.45	11.33	146.23
YGR033C	0.91	1.45	1.75	2.10	2.20	30.99	0.70	100.88	15.46	131.87	16.16	139.35
YGR035W-A	0.89	1.35	1.66	2.02	2.17	27.15	0.79	98.30	21.01	125.45	21.80	106.74
YGR038W	1.05	1.82	2.08	2.30	2.37	18.09	1.10	78.33	19.90	96.42	21.00	102.17
YGR040W	1.07	1.82	2.06	2.29	2.38	11.41	0.04	72.03	9.48	83.44	9.52	154.24
YGR041W	0.99	1.32	1.69	2.22	2.30	40.56	2.24	127.99	5.76	168.55	8.01	180.67
YGR043C	0.96	1.25	1.56	2.09	2.21	33.42	1.82	106.06	6.09	139.48	7.90	277.17
YGR044C	0.93	1.23	1.54	2.05	2.20	31.28	2.74	102.90	6.66	134.18	9.40	310.35
YGR045C	1.00	1.54	1.81	2.20	2.31	33.50	0.77	128.26	13.72	161.76	14.49	124.09
YGR051C	0.97	1.50	1.79	2.20	2.28	31.23	0.68	117.16	10.77	148.39	11.45	111.04
YGR052W	0.98	1.48	1.76	2.16	2.23	28.95	0.42	121.96	6.43	150.91	6.85	179.92
YGR053C	1.02	1.14	1.11	1.08	1.05	226.03	138.55	180.56	129.01	406.59	267.57	518.56
YGR055W	1.02	1.58	1.87	2.24	2.34	37.70	0.50	133.38	6.79	171.09	7.28	138.73
YGR056W	1.01	1.69	1.96	2.24	2.30	20.31	0.60	80.14	17.22	100.45	17.82	132.08
YGR059W	0.94	1.39	1.72	2.18	2.23	33.22	1.82	119.27	7.43	152.48	9.25	231.11
YGR061C	0.98	1.65	1.87	2.16	2.24	19.52	1.20	79.15	15.12	98.67	16.32	124.33
YGR063C	0.97	1.07	1.24	1.71	1.84	126.52	72.54	174.33	29.26	300.84	101.80	357.55
YGR066C	0.97	1.85	2.06	2.25	2.29	18.95	0.43	72.88	11.31	91.83	11.74	264.93
YGR067C	1.05	1.57	1.92	2.35	2.39	39.37	1.34	128.93	5.24	168.30	6.58	141.33
YGR068C	1.00	1.67	1.91	2.22	2.30	32.43	1.71	95.28	23.15	127.71	24.86	133.26
YGR070W	0.95	1.77	2.01	2.25	2.30	11.78	0.32	67.87	3.48	79.65	3.80	68.89
YGR071C	0.97	1.53	1.85	2.17	2.25	24.60	1.61	82.60	18.48	107.20	20.09	116.13
YGR073W	0.97	1.06	1.03	1.03	0.99	191.63	172.00	162.05	147.91	353.68	319.91	519.40
YGR075C	0.86	1.34	1.64	2.01	2.11	22.41	0.90	84.53	14.10	106.94	15.00	120.42
YGR079W	0.86	1.33	1.65	2.01	2.14	24.85	1.16	87.14	20.42	111.99	21.58	108.68
YGR080W	1.02	1.72	1.96	2.25	2.33	15.53	0.14	80.76	12.39	96.28	12.53	120.08
YGR081C	0.98	1.41	1.60	2.05	2.21	54.30	3.06	118.54	33.17	172.84	36.23	317.26
YGR085C	0.98	1.50	1.76	2.12	2.22	31.90	2.48	106.56	26.40	138.46	28.88	158.34
YGR087C	0.99	1.11	1.07	1.05	1.01	223.91	138.62	185.81	132.07	409.72	270.69	516.70
YGR087C	0.92	1.06	1.08	0.92	0.97	162.77	162.69	174.75	184.05	337.53	346.74	506.75
YGR096W	0.99	1.61	1.87	2.17	2.23	17.34	2.01	67.34	14.11	84.68	16.12	160.15
YGR101W	0.99	1.46	1.79	2.22	2.32	33.00	1.55	103.37	3.68	136.36	5.23	158.03
YGR105W	0.95	1.79	2.02	2.23	2.27	11.19	0.24	66.99	11.74	78.18	11.99	145.68
YGR109C	0.96	1.44	1.78	2.26	2.34	30.01	1.80	100.26	4.70	130.27	6.50	208.79
YGR111W	1.00	1.11	1.08	1.07	1.02	198.00	154.22	179.51	141.14	377.51	295.36	519.71
YGR112W	0.93	1.44	1.70	2.05	2.11	12.88	1.65	62.51	16.34	75.39	17.99	176.31
YGR122W	0.93	1.60	1.79	1.93	2.02	45.18	3.75	120.59	32.58	165.76	36.33	162.97
YGR123C	0.94	1.23	1.51	2.04	2.14	37.57	3.26	112.00	6.46	149.57	9.73	169.38
YGR124W	0.93	1.02	0.99	1.00	0.95	216.55	162.36	184.31	145.99	400.86	308.35	518.95
YGR126W	0.87	1.40	1.72	2.05	2.12	35.77	2.47	114.08	30.14	149.85	32.60	90.57
YGR129W	0.96	1.33	1.74	2.27	2.32	41.60	2.92	119.94	5.62	161.54	8.54	295.77
YGR130C	0.87	1.39	1.52	1.82	1.96	31.05	2.45	110.34	26.56	141.38	29.02	88.38
YGR132C	1.00	1.86	2.07	2.25	2.32	9.88	-0.07	74.40	5.92	84.28	5.86	150.49
YGR133W	0.94	1.60	1.86	2.12	2.20	17.20	1.47	80.55	22.13	97.75	23.60	142.70
YGR135W	0.98	1.35	1.75	2.23	2.31	55.46	10.08	135.55	11.21	191.01	21.28	136.46
YGR142W	0.97	1.48	1.76	2.15	2.24	33.63	0.46	133.24	13.94	166.87	14.40	143.54
YGR143W	0.96	1.53	1.79	2.15	2.22	34.02	0.60	134.29	13.68	168.31	14.28	114.99
YGR144W	0.95	1.50	1.82	2.21	2.27	36.13	0.83	132.91	15.43	169.04	16.26	165.44
YGR146C	0.98	1.67	1.95	2.24	2.29	17.72	0.36	78.38	13.54	96.11	13.90	120.87
YGR148C	1.01	1.55	1.83	2.21	2.29	30.61	2.49	101.43	27.69	132.05	30.18	98.56
YGR153W	1.00	1.48	1.74	2.07	2.22	23.78	0.87	87.81	23.22	111.59	24.09	281.47
YGR155W	0.89	1.48	1.83	2.06	2.20	19.71	1.68	88.29	14.26	108.00	15.94	149.54
YGR155W	0.97	1.08	1.05	1.06	1.01	250.45	182.20	191.63	156.53	442.09	338.73	513.49
YGR159C	0.95	1.09	1.15	1.57	2.04	135.45	28.02	184.08	77.70	319.53	105.72	332.19
YGR161W-C	0.94	1.55	1.89	2.22	2.29	25.25	1.74	92.71	19.25	117.95	20.99	150.52
YGR162W	0.97	1.25	1.39	1.89	2.14	43.06	4.87	104.48	46.01	147.54	50.89	284.75
YGR166C	1.03	1.82	2.06	2.30	2.37	16.38	0.27	72.35	14.24	88.73	14.51	128.19
YGR168C	0.97	1.58	1.94	2.13	2.33	23.21	1.93	95.13	17.75	118.34	19.68	159.17
YGR169C-A	0.90	1.43	1.79	2.02	2.18	22.47	1.59	86.28	15.70	108.74	17.29	137.77
YGR169C-A	1.03	1.17	1.13	1.10	1.07	221.01	151.86	189.03	141.39	410.03	293.25	516.48
YGR170W	0.95	1.52	1.72	2.01	2.20	31.34	5.45	91.79	41.59	123.13	47.04	71.13
YGR171C	1.01	1.14	1.10	1.09	1.05	195.83	137.98	182.47	138.71	378.30	276.70	518.01
YGR174C	0.94	1.09	0.94	0.93	0.98	203.96	3.42	211.87	30.13	415.83	33.55	516.57
YGR176W	0.97	1.52	1.84	2.21	2.24	21.87	1.04	127.15	16.74	149.02	17.78	250.32
YGR177C	0.97	1.09	1.06	1.04	1.00	237.09	161.21	188.41	149.35	425.50	310.56	521.38
YGR178C	0.93	1.35	1.59	2.05	2.18	26.95	0.56	102.60	12.07	129.55	12.62	252.42
YGR180C	0.94	1.61	1.87	2.17	2.25	14.68	0.65	64.85	16.56	79.54	17.21	149.34
YGR181W	0.96	1.58	1.85	2.18	2.24	15.68	1.42	67.81	18.28	83.49	19.70	148.67
YGR183C	0.95	1.38	1.49	1.87	2.07	44.76	9.49	111.98	52.51	156.74	62.00	248.43
YGR184C	1.00	1.65	1.88	2.19	2.34	22.66	4.73	83.78	39.14	106.44	43.87	126.84
YGR192C	0.90	1.23	1.48	1.95	2.04	24.11	1.76	105.30	21.73	129.41	23.49	238.96
YGR193C	0.96	1.08	1.04	1.04	0.99	216.07	165.74	188.15	149.83	404.22	315.57	518.92
YGR194C	1.00	1.63	1.78	2.08	2.18	19.82	3.01	84.16	29.87	103.98	32.88	136.70
YGR196C	0.92	1.40	1.66	2.15	2.23	21.65	4.05	77.82	36.67	99.47	40.72	139.69
YGR197C	0.91	1.40	1.68	2.05	2.13	28.34	2.84	99.27	24.96	127.61	27.81	144.27
YGR199W	0.93	1.51	1.91	2.12	2.29	28.30	2.13	101.57	19.97	129.87	22.10	143.17
YGR199W	0.95	1.57	1.93	2.25	2.36	31.98	1.62	114.70	23.28	146.67	24.90	141.10
YGR201C	0.90	1.18	1.37	1.95	2.15	44.17	9.12	122.24	57.52	166.41	66.63	294.70
YGR202C	0.89	1.30	1.63	2.07	2.18	33.44	2.19	99.85	32.60	133.29	34.79	130.72
YGR204C-A	0.87	0.96	0.94	0.93	0.90	176.89	162.59	168.50	153.77	345.39	316.35	509.17
YGR204W	0.97	1.21	1.22	1.32	1.51	177.33	116.47	177.61	126.79	354.94	243.26	471.56

ORF	Optical density at 600 nm at time intervals (h)					GLUCOSE		FRUCTOSE		TOTAL Sugars(g/L)		TOTAL AMINO ACIDS (mg/L)
	0	20	27	42	67	43 h	67 h	43 h	67 h	43 h	67 h	48 h
YGR206W	0.99	1.66	1.90	2.18	2.26	16.39	0.35	83.86	18.41	100.25	18.76	184.78
YGR207C	1.01	1.78	2.03	2.29	2.35	21.16	0.96	88.40	22.36	109.56	23.32	158.33
YGR208W	1.00	1.69	1.93	2.20	2.27	18.74	1.46	77.89	16.93	96.63	18.40	131.29
YGR210C	0.91	1.41	1.90	2.05	2.17	18.04	1.08	78.71	23.65	96.74	24.73	70.54
YGR212W	0.89	1.41	1.65	1.97	2.04	12.97	0.35	56.33	13.11	69.30	13.46	149.71
YGR214W	0.96	1.46	1.71	2.06	2.13	14.44	1.12	54.22	17.51	68.66	18.63	171.27
YGR220C	0.86	1.23	1.37	1.87	2.09	20.19	4.07	73.74	37.50	93.93	41.57	93.14
YGR221C	0.94	1.49	1.76	2.09	2.17	14.90	1.44	71.30	21.93	86.20	23.37	122.30
YGR222W	0.96	1.24	1.43	1.80	2.05	120.10	39.80	171.28	99.23	291.38	139.03	380.74
YGR223C	0.93	1.50	1.84	2.18	2.30	30.36	3.61	91.71	35.61	122.07	39.22	118.79
YGR224W	1.02	1.78	2.05	2.23	2.28	28.75	1.74	106.76	21.57	135.51	23.31	141.77
YGR225W	0.95	1.27	1.44	1.87	1.97	23.84	1.33	94.08	26.11	117.92	27.45	168.78
YGR226C	0.88	1.39	1.71	2.08	2.16	23.83	0.74	92.71	23.04	116.53	23.78	133.68
YGR227W	0.88	1.30	1.61	1.95	2.07	30.25	0.37	112.33	23.06	142.58	23.43	193.20
YGR230W	1.03	1.64	1.99	2.35	2.39	32.97	2.39	109.28	23.85	142.25	26.24	201.09
YGR231C	0.93	2.06	2.22	2.41	2.47	13.02	0.13	65.15	15.64	78.17	15.77	144.01
YGR232W	0.91	1.50	1.76	2.05	2.14	16.72	2.55	80.40	22.34	97.12	24.90	143.82
YGR233C	0.97	1.53	1.78	2.10	2.19	26.67	2.40	99.15	25.11	125.82	27.51	148.32
YGR234W	0.99	1.56	1.74	2.03	2.13	52.68	14.19	123.25	67.41	175.93	81.59	203.59
YGR235C	0.94	1.63	1.90	2.18	2.24	14.06	0.76	69.36	21.48	83.43	22.24	158.03
YGR236C	0.94	1.51	1.75	2.04	2.12	16.00	0.70	74.08	18.10	90.08	18.80	131.49
YGR237C	0.94	1.51	1.77	2.10	2.18	18.47	0.48	76.28	15.53	94.75	16.01	199.91
YGR238C	1.06	1.57	1.87	2.28	2.36	36.28	1.90	129.87	24.86	166.15	26.75	144.95
YGR239C	0.97	1.58	1.97	2.32	2.35	42.05	1.99	136.19	27.84	178.25	29.83	101.46
YGR240C	0.97	1.09	1.05	1.04	1.00	188.57	161.05	179.66	151.20	368.23	312.25	510.36
YGR240C-A	0.93	1.44	1.76	2.16	2.24	27.35	1.76	91.50	28.97	118.86	30.73	118.17
YGR243W	0.95	1.55	1.86	2.21	2.27	16.72	0.95	72.15	24.35	88.86	25.31	125.43
YGR244C	1.02	1.67	1.96	2.20	2.32	12.82	2.44	65.52	27.25	78.34	29.69	68.82
YGR250C	1.05	1.18	1.19	1.02	1.19	182.64	2.03	200.26	18.07	382.90	20.10	527.69
YGR252W	1.03	1.63	1.93	2.23	2.30	24.74	7.56	94.83	54.61	119.57	62.17	99.56
YGR255C	1.02	1.69	1.93	2.25	2.35	21.65	6.35	82.13	44.04	103.78	50.39	84.60
YGR258C	0.89	1.43	2.08	2.10	2.22	21.85	0.64	87.23	21.95	109.07	22.59	86.20
YGR261C	0.88	1.26	1.54	1.93	2.09	36.26	1.20	109.05	30.68	145.30	31.88	209.60
YGR263C	0.94	1.64	1.92	2.17	2.25	21.17	1.25	84.68	13.90	105.85	15.15	177.46
YGR266W	0.99	1.39	1.84	2.22	2.30	45.61	1.80	158.28	28.57	203.88	30.37	220.10
YGR268C	0.94	1.64	1.94	2.19	2.26	19.08	4.80	83.57	26.51	102.65	31.31	147.62
YGR271C-A	0.95	1.20	1.36	1.82	2.17	95.95	12.80	172.01	63.29	267.96	76.09	281.73
YGR271W	1.01	1.63	1.92	2.22	2.31	18.59	0.17	75.31	14.40	93.90	14.57	173.90
YGR273C	1.02	1.58	1.88	2.24	2.29	27.98	0.20	125.33	16.25	153.31	16.45	101.48
YGR276C	0.97	1.59	1.79	2.05	2.27	19.12	3.05	83.52	26.24	102.64	29.29	143.60
YGR283C	0.96	1.52	1.80	2.11	2.20	19.29	1.06	78.09	21.73	97.38	22.79	191.81
YGR286C	0.95	1.53	1.79	2.12	2.21	20.38	0.63	80.93	21.05	101.32	21.68	74.60
YGR289C	0.93	1.44	1.56	2.08	2.12	16.74	3.69	65.38	28.20	82.12	31.89	54.19
YGR292W	0.96	1.55	1.85	2.16	2.26	19.44	1.70	77.97	30.21	97.41	31.91	140.57
YGR294W	0.96	1.06	1.04	1.03	0.99	208.79	137.02	178.84	131.89	387.63	268.91	511.86
YGR296W	0.96	1.89	1.90	2.01	2.10	8.33	0.47	56.92	8.49	65.25	8.96	163.40
YHL006C	0.95	1.23	1.56	1.73	2.00	43.77	5.67	111.59	49.82	155.36	55.49	169.41
YHL008C	1.00	1.77	2.06	2.23	2.37	15.76	1.45	70.52	13.43	86.28	14.88	109.78
YHL009C	0.98	1.08	1.06	1.06	1.01	192.76	165.94	171.22	152.60	363.98	318.54	514.36
YHL011C	0.96	1.06	1.03	1.02	0.98	193.03	173.67	161.79	151.48	354.82	325.15	508.25
YHL014C	0.94	1.74	2.06	2.30	2.41	22.29	1.52	85.39	12.82	107.68	14.35	116.66
YHL014C	0.96	1.08	1.04	1.04	0.99	197.60	167.57	160.77	153.91	358.37	321.48	511.60
YHL015W-A	0.94	1.04	1.01	1.00	0.98	177.14	163.44	148.29	141.44	325.43	304.88	509.57
YHL018W	1.00	1.10	1.07	1.03	1.03	155.81	159.45	140.32	134.91	296.13	294.35	511.32
YHL020C	0.93	1.07	1.03	0.99	0.96	171.62	162.85	145.33	142.41	316.96	305.26	513.20
YHL021C	0.96	1.10	1.06	1.02	0.98	192.40	161.90	152.89	140.44	345.29	302.33	512.68
YHL022C	0.97	2.26	1.67	1.91	1.97	14.22	1.56	59.06	22.95	73.28	24.51	252.30
YHL023C	0.96	1.66	1.98	2.31	2.41	25.02	2.02	77.10	29.89	102.12	31.91	226.79
YHL026C	0.95	1.32	1.49	1.72	1.87	82.81	34.25	134.17	89.79	216.98	124.03	320.23
YHL029C	0.95	1.54	1.83	2.12	2.20	16.23	1.32	65.62	23.47	81.84	24.79	281.85
YHL031C	1.00	1.56	1.81	2.15	2.27	23.19	2.57	81.34	22.38	104.53	24.95	191.88
YHL032C	0.98	1.62	1.80	2.13	2.28	26.27	2.64	87.54	21.98	113.81	24.62	74.58
YHL033C	0.95	1.51	1.66	2.06	2.23	25.25	2.85	87.79	25.49	113.03	28.34	75.82
YHL035C	0.94	1.54	1.76	2.21	2.27	18.09	4.43	69.89	38.19	87.98	42.63	97.03
YHL039W	0.91	1.30	1.44	1.95	2.00	41.79	5.08	121.58	40.58	163.37	45.66	104.47
YHL042W	0.96	1.26	1.34	1.98	2.23	76.32	3.47	138.61	29.12	214.93	32.60	236.73
YHR001W-A	0.95	1.44	1.62	2.11	2.18	41.54	3.19	115.10	29.58	156.63	32.77	108.67
YHR002W	0.90	1.32	1.41	1.92	2.08	33.73	3.60	101.81	35.40	135.54	39.00	182.70
YHR003C	0.89	1.57	2.04	1.90	2.09	15.18	7.37	92.29	51.61	107.47	58.98	53.47
YHR004C	1.04	1.59	1.90	2.10	2.31	19.55	3.41	85.97	42.25	105.52	45.66	76.02
YHR006W	0.97	1.46	1.78	2.21	2.26	27.87	0.35	107.06	16.90	134.92	17.25	109.39
YHR007C-A	1.00	1.58	1.88	2.01	2.22	26.07	3.09	95.61	33.44	121.68	36.53	84.41
YHR008C	1.02	1.56	1.88	2.04	2.23	29.45	2.08	98.33	29.73	127.78	31.81	92.65
YHR009C	1.04	1.69	2.01	2.19	2.38	20.68	2.00	76.96	15.07	97.63	17.07	83.02
YHR016C	0.98	1.49	1.71	2.06	2.25	28.67	3.36	92.64	35.34	121.31	38.71	82.99
YHR018C	0.99	1.50	1.71	2.18	2.28	31.80	3.85	100.89	32.98	132.69	36.83	93.51
YHR022C	0.98	1.62	1.90	2.24	2.35	27.49	4.77	97.49	42.31	124.97	47.08	97.27
YHR025W	0.92	1.40	1.75	2.14	2.18	40.79	1.00	143.34	21.98	184.13	22.98	209.89
YHR027C	0.97	1.28	1.50	1.90	2.07	32.01	3.81	94.45	35.60	126.45	39.41	86.06
YHR030C	0.94	1.14	1.65	1.80	1.99	22.53	3.34	87.85	36.96	110.38	40.30	135.91
YHR031C	1.00	1.65	1.93	2.18	2.30	23.14	2.34	68.89	30.42	92.02	32.76	153.01
YHR032W	1.04	1.87	1.97	2.23	2.31	22.63	2.53	69.89	25.84	92.53	28.37	178.51
YHR033W	1.05	1.97	2.22	2.39	2.48	17.20	2.06	68.06	24.26	85.26	26.31	145.26
YHR037W	0.98	1.73	2.03	2.29	2.38	23.85	2.77	76.84	28.00	100.69	30.78	127.28
YHR039C	0.99	1.66	2.00	2.09	2.18	25.91	3.27	81.65	33.79	107.56	37.06	92.66
YHR039C-A	0.96	1.67	2.01	2.30	2.41	29.40	2.69	90.06	30.36	119.46	33.05	110.39
YHR041C	1.01	1.82	1.97	2.01	2.06	30.10	0.71	118.68	16.93	148.78	17.65	157.43
YHR043C	0.94	1.36	1.65	2.12	2.18	14.70	0.36	82.57	10.97	97.27	11.33	151.86
YHR050W	1.10	2.00	2.18	2.33	2.47	30.28	4.48	84.22	37.62	114.50	42.10	233.31
YHR052W	1.01	1.86	1.82	2.11	2.20	35.96	2.38	105.68	30.74	141.64	33.12	205.42
YHR059W	0.95	1.59	2.27	1.58	1.66	23.45	2.09	86.44	22.54	109.89	24.63	142.10
YHR060W	1.00	1.84	2.15	2.30	2.50	32.67	3.34	83.80	36.96	116.47	40.30	127.35
YHR061C	0.95	1.33	1.70	2.17	2.23	33.02	1.79	115.67	27.01	148.68	28.80	160.03
YHR064C	0.92	1.47	1.72	1.98	2.24	34.08	3.79	85.99	35.63	120.07	39.42	135.64
YHR066W	0.95	1.09	1.31	1.82	1.98	40.66	5.71	110.63	45.69	151.29	51.40	118.67
YHR071W	0.94	1.55	1.83	2.17	2.18	17.94	0.50	95.52	5.71	113.46	6.21	322.72
YHR075C	0.94	1.37	1.72	2.16	2.22	46.11	2.89	144.63	34.93	190.74	37.83	198.29
YHR076W	0.92	1.01	1.24	1.58	1.87	63.83	3.79	135.81	35.63	199.64	39.42	202.90
YHR079C	0.94	1.33	1.55	1.88	1.90	53.62	3.42	148.90	38.15	202.52	41.57	314.46
YHR079C-A	0.95	1.53	1.75	2.12	2.34	39.74	5.83	100.95	45.71	140.68	51.54	150.06
YHR080C	0.90	1.36	1.53	1.94	2.26	33.81	3.45	93.56	40.73	127.37	44.17	102.17
YHR081W	1.15	2.01	2.54	0.72	0.68	28.88	3.62	80.58	37.30	109.45	40.92	265.47
YHR082C	0.97	0.99	0.97	1.02	0.96	190.24	144.29	253.63	186.06	443.87	330.35	529.37
YHR084W	1.05	1.93	2.13	2.30	2.41	26.79	3.20	81.32	25.64	108.11	28.84	178.44
YHR086W-A	1.02	1.80	2.12	2.32	2.44	26.49	4.24	73.60	35.31	100.09	39.56	183.49
YHR087W	0.93	1.40	1.69	2.10	2.15	17.79	0.14	86.06	11.37	103.85	11.50	155.37
YHR089C	1.06	1.92	2.14	2.30	2.43	34.83	5.42	85.51	38.91	120.34	44.34	242.83
YHR090C	0.98	1.77	2.00	2.15	2.28	33.86	3.75	87.06	35.95	120.92	39.70	208.52
YHR092C	0.96	1.50	1.82	2.22	2.26	27.25	1.11	103.63	19.41	130.88	20.52	203.02
YHR094C	0.95	1.19	1.49	2.00	2.08	18.61	0.58	82.19	16.56	100.80	17.14	214.60
YHR096C	0.96	1.48	1.80	2.20	2.27	28.26	0.25	104.48	19.47	132.74	19.72	198.48
YHR097C	0.96	1.64	1.97	2.27	2.39	34.80	7.24	84.48	48.62	119.28	55.85	201.45
YHR098C	0.97	1.64	1.81	2.19	2.31	33.78	4.99	91.23	44.30	125.01	49.28	106.31
YHR100C	1.01	1.86	2.15	2.32	2.45	21.24	2.47	69.59	23.36	90.83	25.83	67.46
YHR102W	0.88	1.13	1.45	1.88	2.11	34.58	5.83	117.03	45.71	151.61	51.54	38.57
YHR103W	1.01	1.47	1.78	2.20	2.26	30.18	2.25	93.44	29.94	123.61	32.19	236.71
YHR104W	1.02	1.71	2.03	2.26	2.43	25.34	2.77	74.22	25.03	99.56	27.80	120.30
YHR109W	0.95	1.31	1.63	2.13	2.21	28.71	2.80	121.32	39.91	150.03	42.71	82.88
YHR112C	0.92	1.33	1.67	2.11	2.16	32.53	1.28	113.32	23.28	145.85	24.56	143.13
YHR113W	0.97	1.56	1.86	2.18	2.43	33.83	4.03	89.42	38.63	123.25	42.66	111.18
YHR114W	0.96	1.34	1.68	2.16	2.22	31.75	1.32	117.31	25.23	149.05	26.55	112.52
YHR115C	1.01	1.55	1.85	2.25	2.31	34.74	0.69	146.97	14.22	181.72	14.92	125.48
YHR121W	0.95	1.51	1.70	2.07	2.33	29.31	2.87	89.88	25.84	119.19	28.71	124.89
YHR123W	0.97	1.45	1.68	2.12	2.22	27.94	0.70	114.52	17.13	142.46	17.83	138.61
YHR124W	0.93	1.49	1.75	2.14	2.20	27.49	0.78	109.34	20.10	136.83	20.88	158.82
YHR126C	0.98	1.50	1.82	2.23	2.29	34.62	2.16	117.01	28.57	151.63	30.73	111.97
YHR127W	0.91	1.57	1.74	2.05	2.32	48.91	7.85	108.88	50.14	157.79	57.99	269.25
YHR128W	1.10	1.95	2.20	2.39	2.47	29.97	3.00	83.28	30.85	113.25	33.85	207.71
YHR129C	1.14	1.90	2.13	2.30	2.43	29.92	4.52	82.57	32.41	112.49	36.93	189.28
YHR132C	0.95	1.34	1.81	1.84	2.00	19.91	0.19	101.90	16.38	121.81	16.57	176.25
YHR135C	0.88	1.09	1.36	1.75	2.05	30.12	3.45	110.05	40.73	140.17	44.17	216.48
YHR136C	0.94	1.42	1.76	2.19	2.25	30.02	1.22	105.71	21.08	135.73	22.30	201.14
YHR137W	1.06	1.72	1.99	2.21	2.36	40.48	5.02	88.57	35.66	129.05	40.68	304.26
YHR138C	1.04	1.81	2.07	2.24	2.37	42.70	6.81	97.49	48.30	140.19	55.11	236.49
YHR142W	0.95	1.19	1.30	1.64	1.78	24.83	0.41	98.50	13.52	123.34	13.93	131.29

ORF	Optical density at 600 nm at time intervals (h)					GLUCOSE		FRUCTOSE		TOTAL Sugars(g/L)		TOTAL AMINO ACIDS (mg/L)
	0	20	27	42	67	43 h	67 h	43 h	67 h	43 h	67 h	48 h
YHR147C	0.96	1.06	1.04	1.04	0.99	164.74	161.66	142.49	134.22	307.23	295.89	521.82
YHR149C	1.04	1.67	1.97	2.23	2.36	16.96	3.62	76.45	37.30	93.42	40.92	116.08
YHR151C	0.94	1.23	1.49	1.96	2.06	34.59	3.49	104.60	33.44	139.19	36.93	279.87
YHR153C	0.94	1.52	1.78	2.09	2.18	14.43	0.75	58.88	20.63	73.31	21.39	214.95
YHR154W	0.94	1.46	1.68	2.02	2.11	16.72	0.90	58.26	22.75	74.98	23.66	294.07
YHR155W	0.94	1.60	2.04	2.14	2.20	15.42	0.79	55.19	16.43	70.61	17.22	308.66
YHR156C	1.00	1.32	1.81	1.86	1.59	38.68	2.32	121.58	31.20	160.26	33.52	116.81
YHR157W	0.93	1.63	1.85	2.15	2.22	14.74	1.07	54.46	22.47	69.20	23.53	347.18
YHR158C	0.97	1.43	1.77	2.25	2.31	36.10	2.09	117.13	27.12	153.23	29.20	135.81
YHR159W	0.98	1.58	1.85	2.17	2.24	17.65	0.45	65.32	20.10	82.97	20.55	127.90
YHR160C	0.95	1.69	1.90	2.19	2.30	17.32	0.40	60.55	14.67	77.87	15.06	246.51
YHR161C	0.93	1.48	1.75	2.09	2.17	22.77	3.38	69.74	31.03	92.51	34.41	274.68
YHR163W	0.94	1.59	2.10	2.04	2.15	20.20	2.23	69.54	29.83	89.74	32.06	241.13
YHR167W	0.93	1.34	1.60	1.95	2.08	34.09	7.26	81.02	49.73	115.11	56.99	212.18
YHR168W	0.93	1.81	2.02	2.21	2.27	16.32	0.09	65.67	15.07	82.00	15.15	147.60
YHR175W-A	0.94	1.61	1.88	2.17	2.22	13.07	0.45	58.88	16.54	71.94	16.99	257.95
YHR176W	0.99	1.66	1.89	2.16	2.24	15.20	1.03	59.96	19.88	75.16	20.91	203.65
YHR178W	0.96	1.63	1.90	2.22	2.28	30.05	-0.09	124.57	11.89	154.62	11.80	116.64
YHR179W	0.94	1.61	1.79	2.08	2.21	19.02	1.67	61.66	26.22	80.68	27.89	285.84
YHR181W	0.93	1.22	1.56	2.08	2.18	38.73	2.54	129.34	39.24	168.07	41.78	275.99
YHR185C	0.94	1.48	1.71	2.03	2.12	14.46	2.16	51.79	21.19	66.25	23.35	212.95
YHR189W	0.92	1.49	1.72	2.03	2.13	16.19	1.10	61.13	16.31	77.32	17.40	260.89
YHR191C	0.87	1.60	1.82	2.07	2.13	10.33	1.80	52.11	22.49	62.44	24.29	241.38
YHR193C	0.93	1.47	1.70	2.04	2.14	18.13	1.56	71.00	17.02	89.13	18.58	199.51
YHR194W	0.93	1.52	1.73	2.06	2.17	34.25	12.49	83.45	60.17	117.70	72.66	346.82
YHR195W	0.95	1.58	1.81	2.13	2.21	20.93	1.16	75.07	20.11	96.01	21.28	220.91
YHR198C	0.94	1.48	1.71	2.04	2.15	21.19	0.94	73.29	20.80	94.48	21.74	279.30
YHR199C	0.90	1.38	1.59	1.90	2.03	23.79	1.01	78.56	19.97	102.35	20.98	239.29
YHR202W	0.90	1.49	1.75	2.07	2.18	21.90	2.41	78.56	33.59	100.46	36.00	183.82
YHR203C	0.92	1.28	1.55	2.01	2.14	23.38	0.39	82.81	18.93	106.19	19.32	240.56
YHR204W	0.90	1.44	1.68	1.99	2.06	16.43	0.90	64.91	23.80	81.34	24.70	240.54
YHR206W	1.00	1.67	1.99	2.24	2.29	21.62	3.20	97.51	25.64	119.13	28.84	119.13
YHR209W	0.93	1.69	1.93	2.17	2.26	16.45	-0.19	69.22	9.84	85.67	9.65	314.61
YHR210C	0.97	1.67	1.93	2.21	2.26	16.35	1.67	63.33	24.28	79.68	25.95	242.09
YHR214W-A	0.98	1.59	1.88	2.14	2.27	23.92	0.14	103.69	19.00	127.61	19.14	253.16
YIL001W	0.94	1.54	1.79	2.10	2.17	17.17	1.64	71.00	19.00	88.17	20.64	194.84
YIL002W-A	0.92	1.62	1.91	2.20	2.26	20.28	1.82	77.07	21.84	97.35	23.66	222.10
YIL005W	0.94	1.56	1.81	2.09	2.17	17.57	2.00	68.43	28.47	86.00	30.47	126.03
YIL006W	0.91	1.48	1.76	2.07	2.16	17.97	0.72	72.59	18.34	90.55	19.06	309.83
YIL007C	0.93	1.61	1.85	2.16	2.21	11.56	0.11	62.77	16.13	74.33	16.24	154.70
YIL008W	0.91	1.40	1.65	1.99	2.10	20.08	1.03	69.31	26.01	89.39	27.04	165.06
YIL009C-A	0.93	1.55	1.84	2.04	2.13	13.46	-0.11	53.40	12.41	66.86	12.30	249.05
YIL009W	0.94	1.54	1.82	2.15	2.22	15.63	0.32	73.82	13.49	89.44	13.81	217.65
YIL010W	0.93	1.78	2.09	2.22	2.29	8.99	0.11	49.80	7.29	58.79	7.40	352.74
YIL011W	0.91	1.22	1.54	2.06	2.14	46.53	4.85	143.16	44.56	189.69	49.41	134.74
YIL014C-A	0.91	1.36	1.65	2.06	2.11	24.29	1.18	93.53	19.99	117.82	21.17	110.85
YIL015W	0.90	1.52	1.79	2.10	2.17	19.13	1.80	74.37	23.83	93.50	25.63	227.60
YIL016W	0.95	1.60	1.86	2.14	2.21	16.83	1.93	72.18	19.58	89.01	21.50	205.63
YIL017C	0.92	1.42	1.65	1.79	1.92	16.75	1.39	64.80	20.74	81.55	22.14	253.62
YIL018W	1.02	1.69	1.95	2.16	2.29	25.28	5.42	96.44	38.91	121.72	44.34	101.52
YIL020C	0.93	1.55	1.80	2.15	2.23	20.08	1.37	76.13	21.95	96.21	23.32	210.84
YIL023C	1.01	1.44	1.74	2.16	2.23	31.68	0.73	116.98	21.93	148.67	22.66	119.17
YIL024C	0.95	1.53	1.89	2.27	2.31	34.14	1.18	120.50	29.56	154.63	30.74	170.55
YIL027C	0.93	1.74	1.96	2.18	2.24	10.06	0.25	56.07	11.89	66.13	12.14	379.41
YIL029C	0.91	1.52	1.80	2.13	2.22	22.12	1.70	75.66	24.73	97.78	26.43	294.40
YIL030C	0.90	1.45	1.72	2.06	2.18	15.84	0.30	69.04	16.29	84.88	16.58	110.64
YIL034C	0.96	1.46	1.79	2.20	2.28	28.67	2.20	132.09	34.00	160.76	36.20	129.24
YIL035C	0.97	1.84	1.72	2.04	2.08	16.44	-0.26	94.11	4.00	110.55	3.74	324.06
YIL036W	0.93	1.07	1.10	0.92	0.91	164.03	166.44	168.62	155.57	332.65	322.01	514.28
YIL036W	0.92	0.95	0.92	0.96	0.90	150.75	193.68	211.43	171.42	362.18	365.10	523.87
YIL037C	0.98	1.38	1.69	2.17	2.25	35.63	5.02	117.83	51.08	153.46	56.10	101.58
YIL039W	0.97	1.20	1.52	2.08	2.20	46.64	3.78	141.17	37.99	187.81	41.77	124.70
YIL041W	0.95	1.55	1.66	1.93	2.05	11.92	0.61	61.49	16.99	73.41	17.60	91.96
YIL042C	0.91	1.53	1.82	2.08	2.16	11.73	0.03	55.42	11.94	67.16	11.97	88.66
YIL043C	0.94	1.45	1.44	1.74	1.85	18.00	0.63	65.44	17.55	83.44	18.18	276.95
YIL044C	0.92	1.50	2.01	1.86	2.05	12.42	0.22	65.56	12.01	77.97	12.23	210.74
YIL045W	0.88	1.36	1.58	1.90	1.97	13.93	1.32	57.74	18.14	71.67	19.46	179.93
YIL047C	1.02	1.60	1.79	2.10	2.26	27.21	3.75	97.81	35.95	125.01	39.70	161.13
YIL049W	0.97	1.00	0.98	1.02	0.96	205.34	191.76	218.69	175.12	424.03	366.88	524.68
YIL050W	0.88	1.30	1.51	1.84	1.91	15.68	0.23	68.08	12.55	83.76	12.78	227.86
YIL055C	0.91	1.56	1.80	2.08	2.14	8.47	0.25	34.40	5.26	42.87	5.51	271.19
YIL056W	0.96	1.42	1.58	1.93	2.13	29.42	7.24	111.80	48.62	141.22	55.85	110.21
YIL064W	0.91	1.44	1.68	2.00	2.09	16.17	0.70	65.03	18.70	81.20	19.39	211.61
YIL067C	0.93	1.49	1.74	2.06	2.16	17.73	0.86	71.74	19.97	89.47	20.83	204.01
YIL069C	0.95	1.47	1.78	2.16	2.27	26.14	2.42	75.72	31.61	101.86	34.03	111.31
YIL070C	0.91	1.34	1.56	1.92	2.05	21.67	1.07	77.97	24.16	99.64	25.23	115.53
YIL071C	0.89	1.53	1.81	2.10	2.19	17.43	0.98	70.77	26.99	88.20	27.97	97.49
YIL073C	1.02	1.49	1.68	2.02	2.20	31.80	4.99	110.67	44.30	142.47	49.28	137.96
YIL076W	0.94	1.54	1.84	2.17	2.25	12.75	5.89	59.20	20.33	71.95	26.22	85.24
YIL077C	0.96	1.49	1.78	2.05	2.20	15.58	0.61	64.12	20.29	79.70	20.91	180.59
YIL079C	0.91	1.02	0.98	0.97	0.93	202.97	151.56	189.20	134.37	392.17	285.93	521.52
YIL085C	0.99	1.45	1.77	2.11	2.26	26.18	2.47	101.15	23.36	127.33	25.83	249.03
YIL087C	0.99	1.32	1.58	1.86	2.04	54.15	2.77	127.96	25.03	182.10	27.80	68.86
YIL088C	0.93	1.52	1.76	2.07	2.17	16.32	1.76	61.13	28.12	77.45	29.89	200.42
YIL089W	0.92	1.48	1.74	2.06	2.14	16.48	1.46	64.36	23.63	80.84	25.10	129.24
YIL095W	0.94	1.34	1.69	2.05	2.23	34.78	4.03	115.96	38.63	150.75	42.66	113.48
YIL096C	0.88	1.44	1.92	1.83	2.03	17.21	0.78	67.78	21.26	84.99	22.04	135.12
YIL098C	0.92	1.47	1.72	2.03	2.14	19.63	1.03	68.95	21.64	88.59	22.67	284.13
YIL099W	0.91	1.58	1.87	2.16	2.22	16.72	2.50	65.50	25.52	82.22	28.02	92.54
YIL107C	0.93	1.52	1.78	2.11	2.19	19.93	2.41	66.87	32.26	86.80	34.67	107.93
YIL111W	0.91	1.48	1.76	2.07	2.17	15.05	0.80	61.75	21.48	76.80	22.28	99.47
YIL112W	0.88	1.15	1.51	2.08	2.14	30.71	2.87	102.58	25.84	133.29	28.71	55.07
YIL113W	0.85	1.12	1.42	1.82	2.08	29.85	7.85	106.22	50.14	136.08	57.99	58.08
YIL119C	1.01	1.62	1.93	2.18	2.32	13.01	3.00	68.34	30.85	81.35	33.85	83.76
YIL120W	1.03	1.74	2.05	2.28	2.37	20.47	4.52	87.00	32.41	107.47	36.93	111.81
YIL121W	1.00	1.60	1.93	2.16	2.24	20.01	5.02	78.93	35.66	98.94	40.68	107.24
YIL122W	1.01	1.63	1.92	2.11	2.29	27.39	6.81	84.50	48.30	111.90	55.11	138.20
YIL123W	0.95	1.59	1.74	2.04	2.19	23.17	7.07	81.06	46.20	104.24	53.27	90.33
YIL128W	0.94	1.45	1.63	1.97	2.13	26.74	5.31	89.48	39.49	116.21	44.80	141.55
YIL131C	0.93	1.59	1.90	2.16	2.30	20.80	2.48	69.92	33.26	90.72	35.74	118.00
YIL133C	0.91	1.38	1.72	2.13	2.25	27.35	1.11	85.71	25.32	113.06	26.43	104.92
YIL134C-A	0.97	1.60	1.86	2.09	2.18	32.12	6.63	92.71	47.83	124.82	54.46	118.91
YIL135C	0.96	1.52	1.73	2.05	2.21	29.44	4.59	91.77	32.95	121.21	37.55	176.72
YIL137C	0.94	1.66	1.93	2.19	2.27	12.94	0.11	65.50	15.39	78.44	15.50	108.89
YIL138C	0.94	1.40	1.59	1.92	2.13	19.55	3.76	76.57	35.08	96.12	38.84	136.60
YIL140W	0.93	1.13	1.47	2.05	2.21	42.04	1.42	127.47	37.48	169.51	38.90	135.33
YIL146C	0.96	1.30	1.57	1.85	2.03	54.07	8.64	130.23	58.18	184.31	66.82	91.10
YIL153W	0.93	1.36	1.57	1.88	2.02	39.03	6.59	97.54	45.49	136.57	52.08	161.11
YIL154C	0.98	1.39	1.73	2.07	2.27	31.52	18.47	102.94	77.64	134.46	96.11	136.96
YIL156W	0.96	1.64	1.91	2.17	2.26	6.96	0.21	52.93	8.82	59.89	9.02	112.36
YIL158W	0.96	1.57	1.84	2.12	2.20	16.51	0.41	69.45	14.91	85.96	15.32	94.93
YIL164C	0.96	1.65	1.91	2.21	2.23	17.76	0.05	99.94	8.37	117.70	8.42	157.59
YIL170W	0.94	1.51	1.76	2.07	2.16	17.12	0.50	68.84	16.52	85.95	17.03	120.20
YIR005W	0.93	1.44	1.70	2.03	2.12	13.34	0.64	57.85	20.02	71.19	20.67	98.65
YIR018C-A	0.93	1.39	1.63	1.94	2.07	18.32	0.78	72.00	22.65	90.31	23.43	100.19
YIR019C	1.00	1.66	1.83	2.12	2.22	17.87	-0.17	71.50	14.98	89.37	14.81	163.36
YIR024C	1.00	1.88	1.75	2.07	2.21	31.88	1.14	95.31	24.91	127.19	26.05	219.35
YIR025W	1.01	1.82	2.11	2.31	2.39	17.42	0.17	70.04	13.36	87.45	13.53	194.99
YIR029W	0.97	1.48	1.74	2.10	2.18	30.40	0.82	123.84	18.30	154.23	19.12	178.88
YIR031C	0.90	1.35	1.65	2.07	2.13	21.65	0.17	107.88	10.36	129.52	10.53	168.49
YIR032C	0.98	1.89	2.10	2.25	2.35	16.18	-0.18	81.22	10.20	97.41	10.02	316.07
YIR033W	0.98	1.65	1.99	2.20	2.30	20.11	0.72	67.08	22.57	87.19	23.30	226.05
YIR034C	0.96	1.61	1.75	2.04	2.13	27.76	3.96	94.61	44.56	122.37	48.52	181.91
YIR035C	1.01	1.41	1.70	2.15	2.25	28.81	1.31	111.98	29.74	140.78	31.05	198.26
YIR036C	0.95	1.64	1.95	2.21	2.30	27.15	0.74	80.81	21.80	107.96	22.54	234.35
YIR037W	0.98	1.68	1.97	2.12	2.21	30.81	2.39	75.05	29.94	105.85	32.33	240.20
YIR038C	0.95	1.57	1.86	2.19	2.30	31.43	1.23	95.08	28.63	126.50	29.85	133.14
YIR039C	0.97	1.31	1.58	2.06	2.17	28.62	1.53	94.90	32.24	123.52	33.77	131.44
YJL012C	0.94	1.35	1.68	2.15	2.25	33.34	1.95	119.47	35.31	152.82	37.26	137.91
YJL013C	0.99	1.60	1.88	2.17	2.28	20.89	1.79	67.55	25.81	88.44	27.60	183.34
YJL020C	0.96	1.63	1.90	2.21	2.25	15.48	-0.25	91.50	4.74	106.98	4.49	238.51
YJL037W	0.96	1.48	1.82	2.17	2.31	21.06	1.33	64.80	25.16	85.86	26.49	23.46
YJL043W	0.92	1.34	1.64	2.00	2.13	48.37	4.11	102.72	37.57	151.10	41.68	112.17
YJL044C	0.91	1.41	1.76	2.10	2.22	28.29	2.13	78.15	31.39	106.44	33.52	55.59
YJL047C	1.12	1.58	1.89	2.26	2.34	23.94	1.40	93.12	25.68	117.05	27.08	124.19

ORF	Optical density at 600 nm at time intervals (h)					GLUCOSE		FRUCTOSE		TOTAL Sugars(g/L)		TOTAL AMINO ACIDS (mg/L)
	0	20	27	42	67	43 h	67 h	43 h	67 h	43 h	67 h	48 h
YJL051W	0.97	1.73	2.03	2.34	2.36	18.66	1.12	87.37	22.32	106.04	23.44	116.35
YJL053W	1.10	1.91	2.16	2.36	2.45	18.12	0.16	64.18	14.42	82.30	14.58	207.38
YJL059W	1.01	1.63	1.93	2.27	2.31	16.72	1.63	80.79	23.17	97.51	24.80	140.33
YJL062W	1.03	1.44	1.78	2.26	2.31	16.55	0.66	79.64	18.16	96.20	18.81	202.47
YJL070C	1.03	1.54	1.84	2.18	2.22	16.39	1.00	81.37	17.19	97.76	18.19	155.20
YJL079C	0.98	1.65	1.95	2.28	2.34	16.40	1.03	76.71	20.72	93.11	21.76	213.50
YJL083W	1.05	1.54	1.84	2.18	2.23	18.65	1.15	81.22	20.56	99.88	21.71	249.82
YJL095W	1.13	1.64	1.94	2.32	2.40	21.82	1.83	91.04	22.50	112.86	24.33	305.04
YJL098W	1.06	1.58	1.92	2.32	2.35	23.24	2.05	90.27	24.42	113.51	26.47	153.69
YJL099W	1.00	1.65	1.99	2.29	2.39	31.84	2.78	110.72	26.11	142.56	28.89	53.51
YJL100W	0.96	1.41	1.98	2.20	2.27	22.07	1.55	86.06	23.80	108.12	25.35	216.41
YJL108C	0.96	1.34	1.69	2.14	2.20	24.15	1.62	96.13	26.58	120.28	28.20	166.80
YJL110C	1.08	1.75	2.02	2.34	2.37	15.91	1.60	77.97	21.75	93.89	23.35	98.65
YJL134W	1.02	1.79	2.08	2.35	2.36	12.29	1.04	71.41	21.86	83.70	22.90	103.32
YJL139C	1.06	1.68	2.01	2.34	2.36	16.39	0.68	80.02	19.50	96.41	20.18	101.48
YJL142C	0.96	1.87	2.08	2.34	2.34	6.08	0.24	52.52	6.10	58.61	6.34	129.16
YJL146W	0.97	1.64	1.95	2.28	2.29	13.31	0.66	71.38	14.82	84.70	15.47	259.00
YJL157C	0.94	1.69	1.97	2.28	2.35	11.85	0.56	66.29	14.53	78.13	15.09	103.75
YJL159W	0.99	1.69	1.99	2.34	2.35	10.47	0.19	62.66	9.36	73.13	9.54	111.95
YJL165C	0.97	1.89	2.10	2.31	2.33	9.55	0.06	58.12	8.31	67.67	8.38	66.42
YJL175W	1.02	1.30	1.51	1.81	1.91	46.51	13.11	123.22	61.26	169.73	74.37	224.04
YJL187C	1.01	1.46	1.71	2.14	2.19	22.15	2.65	90.98	29.58	113.13	32.23	55.50
YJL191W	0.96	1.32	1.62	2.07	2.15	25.13	2.29	93.61	27.21	118.74	29.50	236.88
YJL201W	0.93	1.42	1.79	2.21	2.27	23.14	2.30	83.98	27.35	107.12	29.65	104.94
YJL206C	0.99	1.50	1.79	2.19	2.24	15.83	1.85	75.84	27.59	91.67	29.44	112.41
YJL210W	1.02	1.65	1.94	2.30	2.34	14.50	1.58	73.90	22.86	88.40	24.44	63.89
YJL214W	1.01	1.72	1.99	2.31	2.35	12.27	1.37	71.97	20.33	84.24	21.70	108.10
YJR001W	1.05	1.64	1.98	2.30	2.31	17.05	1.21	84.27	16.38	101.32	17.59	69.32
YJR009C	0.93	1.41	1.60	1.94	1.99	10.80	2.18	65.64	21.64	76.44	23.82	131.32
YJR019C	0.94	1.67	1.95	2.25	2.29	16.16	1.59	83.25	24.46	99.41	26.05	191.52
YJR025C	0.99	1.55	1.77	2.04	2.13	30.53	0.18	88.17	13.25	118.70	13.43	155.37
YJR030C	1.07	1.43	1.62	1.94	1.97	13.66	0.67	79.67	17.87	93.34	18.54	23.03
YJR032W	1.03	1.12	1.21	1.53	1.67	62.98	16.50	132.65	63.15	195.63	79.65	429.24
YJR033C	0.96	1.31	1.50	1.79	1.84	48.77	15.69	121.05	65.56	169.83	81.25	213.06
YJR035W	0.94	1.31	1.63	2.04	2.16	33.16	3.17	90.78	23.68	123.94	26.85	142.24
YJR035W	1.00	1.14	1.10	1.05	1.02	180.43	173.95	137.89	140.87	318.33	314.82	520.86
YJR036C	1.07	1.74	2.00	2.27	2.35	21.46	1.20	69.69	21.43	91.15	22.63	194.30
YJR040W	1.00	1.69	1.96	2.23	2.34	22.48	0.71	67.43	21.75	89.91	22.46	186.12
YJR043C	0.92	1.43	1.72	2.05	2.16	46.43	9.49	90.71	53.02	137.15	62.51	181.70
YJR044C	0.98	1.60	1.87	2.14	2.28	23.05	0.17	88.19	15.10	111.25	15.27	176.10
YJR051W	1.02	1.44	1.72	2.17	2.26	20.61	0.19	86.99	15.80	107.61	16.00	110.25
YJR053W	0.95	1.57	1.90	2.26	2.30	20.03	1.20	91.74	23.67	111.77	24.88	86.41
YJR056C	0.97	1.61	1.95	2.26	2.29	26.14	0.48	79.20	19.49	105.34	19.97	28.94
YJR058C	0.91	1.22	1.51	2.01	2.09	30.56	2.52	112.97	29.72	143.53	32.24	107.52
YJR060W	1.05	1.74	2.02	2.32	2.35	9.46	0.20	71.59	21.73	81.05	21.93	71.88
YJR061W	0.93	1.47	1.75	2.04	2.22	17.82	2.19	61.05	26.19	78.86	28.37	176.15
YJR062C	0.95	1.56	1.91	2.22	2.31	24.26	0.66	80.64	17.40	104.90	18.06	29.55
YJR069C	0.97	1.60	1.92	2.21	2.32	33.37	2.71	91.48	32.44	124.85	35.15	183.99
YJR070C	0.87	1.35	1.69	2.09	2.25	36.77	3.36	79.67	35.26	116.44	38.62	94.74
YJR073C	1.11	1.87	1.99	2.21	2.28	22.49	-0.25	78.41	7.27	100.90	7.03	160.05
YJR075W	0.98	1.42	1.63	2.03	2.09	18.70	1.23	81.66	28.25	100.36	29.48	116.80
YJR079W	1.05	1.74	1.97	2.22	2.32	19.62	0.59	68.22	17.44	87.84	18.03	115.23
YJR080C	1.05	1.74	1.96	2.21	2.31	16.10	1.50	61.72	23.33	77.82	24.83	163.62
YJR084W	1.06	1.52	1.79	2.17	2.21	10.67	0.68	68.31	15.00	78.98	15.67	88.59
YJR090C	1.03	1.48	1.74	2.33	2.16	15.51	1.72	82.10	21.28	97.62	23.01	148.84
YJR094C	1.02	1.56	1.72	2.06	2.13	15.50	1.39	85.06	22.04	100.56	23.43	98.77
YJR097W	1.02	1.57	1.79	2.09	2.23	23.05	1.74	73.64	25.70	96.69	27.44	162.38
YJR100C	1.01	1.97	2.18	2.29	2.37	10.77	0.40	54.81	6.27	65.58	6.66	292.38
YJR102C	0.99	1.70	1.86	2.02	2.15	24.45	2.97	81.49	40.36	105.94	43.33	346.91
YJR103W	1.05	1.80	2.04	2.27	2.39	18.65	2.38	65.94	24.78	84.59	27.17	168.67
YJR104C	0.91	1.24	1.36	1.63	1.87	45.94	3.64	119.89	25.75	165.83	29.40	55.12
YJR104C	1.01	1.15	1.14	1.08	1.06	176.25	202.13	157.40	162.21	333.65	364.34	523.25
YJR106W	0.96	1.55	1.79	2.10	2.17	15.43	1.72	74.08	19.61	89.51	21.33	69.42
YJR107W	0.87	1.09	1.17	1.36	1.73	109.16	40.40	143.60	88.10	252.75	128.50	301.05
YJR107W	1.07	1.34	1.32	1.25	1.29	150.64	158.47	136.60	149.63	287.25	308.10	523.96
YJR108W	0.96	1.50	1.78	2.06	2.22	32.17	2.24	101.55	27.37	133.72	29.61	150.21
YJR109C	0.95	1.40	1.56	1.92	1.97	17.99	1.10	90.83	21.96	108.82	23.07	90.39
YJR110W	0.91	1.29	1.51	1.80	1.92	25.16	2.45	77.42	33.24	102.58	35.69	128.92
YJR111C	0.88	1.35	1.66	2.01	2.15	25.01	1.02	82.51	27.44	107.52	28.46	56.94
YJR115W	1.04	1.66	1.87	1.97	2.07	33.27	0.00	95.11	12.37	128.38	12.37	270.11
YJR116W	0.98	1.63	1.87	2.12	2.21	14.95	1.52	62.69	22.88	77.64	24.40	321.43
YJR118C	1.01	1.14	1.11	1.05	1.02	150.85	182.31	136.49	154.29	287.34	336.60	525.95
YJR119C	1.02	1.77	2.29	2.30	2.37	16.45	1.73	67.58	21.10	84.03	22.83	190.18
YJR120W	1.03	1.02	1.02	1.03	0.93	143.33	114.46	177.90	134.96	321.22	249.42	488.51
YJR124C	1.09	1.81	2.06	2.25	2.38	16.45	2.71	65.64	25.75	82.09	28.46	225.72
YJR125C	1.02	1.79	2.29	2.12	2.22	17.32	2.03	72.03	24.51	89.35	26.54	156.30
YJR129C	0.99	1.67	1.98	2.26	2.38	22.27	1.92	80.26	24.34	102.53	26.25	179.76
YJR130C	0.98	1.62	1.96	2.24	2.38	16.68	1.42	64.56	23.58	81.24	25.00	92.90
YJR133W	1.03	1.67	1.86	2.13	2.22	19.93	0.14	76.16	13.23	96.09	13.38	98.70
YJR134C	1.01	1.58	1.82	2.10	2.21	21.84	2.07	82.81	25.50	104.65	27.57	111.04
YJR135C	0.99	1.62	1.81	1.96	2.21	74.12	21.42	132.53	67.71	206.65	89.13	402.84
YJR135C	1.02	1.14	1.11	1.07	1.04	177.15	201.28	153.97	159.12	331.12	360.39	531.76
YJR135W-A	1.01	1.68	1.93	2.18	2.31	16.87	1.57	68.46	22.97	85.32	24.54	163.72
YJR137C	0.92	1.36	1.72	2.04	2.24	33.78	4.54	117.51	38.91	151.30	43.46	-31.30
YJR139C	1.08	1.50	1.82	2.20	2.25	26.25	5.37	91.50	42.13	117.76	47.51	107.22
YJR140C	1.02	1.65	2.09	2.14	2.25	13.13	0.40	78.30	18.26	91.43	18.66	69.08
YJR142W	0.96	1.65	1.95	2.24	2.30	19.72	2.27	67.20	20.17	86.92	22.43	148.77
YJR147W	0.99	1.42	1.65	2.01	2.01	15.23	0.46	72.73	16.72	87.96	17.18	86.18
YJR148W	0.97	1.64	1.89	2.16	2.28	18.34	2.15	66.99	18.84	85.34	20.99	166.39
YJR149W	1.00	1.62	1.90	2.20	2.30	14.65	1.54	64.27	17.19	78.92	18.72	136.63
YJR150C	1.08	1.69	1.98	2.31	2.32	15.91	0.74	86.67	20.76	102.58	21.50	138.61
YJR151W-A	0.97	1.51	2.29	2.00	2.25	14.62	2.01	60.08	24.55	74.70	26.56	168.62
YJR152W	0.94	1.57	1.85	2.18	2.22	15.21	2.04	78.12	23.74	93.33	25.78	123.28
YJR154W	0.94	1.62	1.86	2.16	2.20	16.45	2.35	90.19	26.98	106.64	29.33	149.23
YKL003C	0.95	1.55	1.84	2.13	2.28	14.37	1.00	62.16	15.00	76.53	15.99	256.67
YKL007W	0.97	1.45	1.77	2.06	2.22	29.52	2.77	86.06	31.12	115.58	33.90	250.51
YKL008C	0.90	1.53	1.91	2.22	2.34	29.88	1.51	83.22	22.36	113.09	23.87	108.94
YKL010C	0.90	1.47	1.86	2.17	2.29	25.66	0.51	83.48	19.04	109.14	19.55	101.48
YKL015W	0.87	1.23	1.39	1.76	2.14	24.79	4.12	90.74	46.92	115.54	51.04	183.65
YKL017C	1.08	1.66	1.78	2.07	2.16	16.15	0.17	69.22	12.48	85.36	12.65	106.60
YKL018C-A	1.04	1.72	1.97	2.21	2.31	17.00	0.74	75.60	15.07	92.60	15.80	94.35
YKL020C	0.98	1.71	1.98	2.28	2.31	13.51	0.54	76.48	16.49	89.99	17.03	178.18
YKL026C	1.00	1.55	1.77	2.06	2.16	16.92	0.55	69.13	16.43	86.05	16.98	85.82
YKL032C	0.98	1.37	1.61	1.91	1.96	26.50	3.84	95.34	31.93	121.84	35.77	128.40
YKL033W-A	1.02	2.20	1.96	2.04	2.20	20.62	1.63	71.91	18.03	92.53	19.66	132.18
YKL034W	1.00	1.66	2.22	2.17	2.17	16.66	1.00	70.48	22.56	87.14	23.56	136.55
YKL037W	0.97	1.29	1.49	1.75	1.90	37.71	2.87	88.52	33.42	126.23	36.30	179.47
YKL038W	1.01	1.46	1.71	2.06	2.09	12.57	0.37	67.67	16.00	80.23	16.37	200.04
YKL039W	1.02	1.53	1.75	2.06	2.16	17.44	1.81	57.74	18.53	75.18	20.34	186.34
YKL046C	1.01	1.41	1.68	2.03	2.08	38.24	7.16	123.28	53.61	161.52	60.77	154.68
YKL047W	0.91	1.27	1.47	1.80	1.94	17.45	1.90	68.92	22.38	86.38	24.28	86.68
YKL048C	1.01	1.28	1.52	1.96	2.12	52.73	8.14	109.66	47.04	162.39	55.17	148.73
YKL050C	0.97	1.51	1.77	2.08	2.17	19.29	1.43	66.96	18.26	86.25	19.69	96.05
YKL051W	0.95	1.55	1.86	2.22	2.28	20.53	1.62	83.60	23.78	104.12	25.39	85.94
YKL056C	0.93	1.33	1.66	2.14	2.22	24.36	2.77	86.82	26.96	111.18	29.73	84.46
YKL061W	0.88	1.35	1.66	2.03	2.15	22.64	1.02	71.85	19.81	94.49	20.83	118.58
YKL062W	1.04	1.92	2.13	2.35	2.40	8.02	0.04	60.67	9.75	68.69	9.79	96.07
YKL068W	0.89	1.34	1.71	2.05	2.19	34.89	1.37	103.34	25.88	138.23	27.25	106.29
YKL070W	1.00	1.66	1.76	2.04	2.13	15.68	0.29	64.56	12.34	80.24	12.62	108.27
YKL071W	0.97	1.84	1.82	2.10	2.21	16.23	0.06	68.31	11.80	84.54	11.86	114.91
YKL077W	0.99	1.47	1.70	2.04	2.14	22.93	1.98	83.48	27.91	106.41	29.89	108.00
YKL079W	1.04	1.82	2.08	2.35	2.38	15.92	1.08	84.36	26.98	100.28	28.06	77.59
YKL081W	1.00	1.60	1.84	2.10	2.20	23.17	1.51	79.06	18.48	102.22	19.99	140.69
YKL087C	0.95	1.54	1.80	2.13	2.23	18.96	1.23	71.77	18.84	90.73	20.07	99.09
YKL091C	0.92	1.39	1.64	1.96	2.06	20.01	1.35	72.76	18.84	92.77	20.19	104.34
YKL093W	1.00	1.63	1.88	2.18	2.27	17.62	2.04	64.24	22.14	81.86	24.19	94.04
YKL094W	0.99	1.56	1.82	2.15	2.24	18.22	1.17	69.83	21.82	88.05	22.99	116.02
YKL101W	0.96	1.33	1.61	1.98	2.13	27.83	1.36	85.41	23.35	113.24	24.70	151.76
YKL105C	1.09	1.65	1.92	2.27	2.29	12.94	1.17	76.95	25.79	89.89	26.96	90.64
YKL107W	0.94	1.35	1.61	1.97	2.08	22.65	2.17	75.63	27.08	98.28	29.26	155.59
YKL109W	1.13	1.53	1.73	2.14	2.25	24.44	3.72	89.37	34.29	113.81	38.00	151.93
YKL110C	0.90	1.35	1.71	2.10	2.22	39.07	2.59	91.94	30.08	131.01	32.67	122.78
YKL114C	0.86	1.38	1.77	2.07	2.24	33.31	2.95	97.45	37.29	130.76	40.24	112.31
YKL116C	0.97	1.56	1.83	2.16	2.22	12.14	0.63	67.11	19.29	79.25	19.92	110.64
YKL117W	1.10	1.89	1.97	2.17	2.36	31.85	0.74	105.24	18.52	137.09	19.26	131.70

	Optical density at 600 nm at time intervals (h)					GLUCOSE		FRUCTOSE		TOTAL Sugars(g/L)		TOTAL AMINO ACIDS (mg/L)
ORF	0	20	27	42	67	43 h	67 h	43 h	67 h	43 h	67 h	48 h
YKL120W	1.03	1.73	1.99	2.23	2.31	21.08	0.37	83.66	12.28	104.73	12.66	112.31
YKL124W	0.96	1.92	2.19	2.38	2.45	18.45	2.25	73.49	15.68	91.95	17.92	92.13
YKL124W	1.08	1.22	1.20	1.07	1.13	195.66	168.20	171.48	152.53	367.15	320.73	519.83
YKL127W	1.00	1.63	1.89	2.17	2.27	25.79	0.73	86.03	14.44	111.82	15.17	209.60
YKL128C	1.05	1.42	1.59	1.90	2.02	19.61	1.59	71.30	23.31	90.90	24.90	109.06
YKL133C	1.00	1.83	2.13	2.37	2.43	21.75	3.14	77.38	21.52	99.13	24.66	85.86
YKL133C	1.02	1.16	1.15	1.08	1.07	209.58	161.60	162.93	143.13	372.51	304.73	528.01
YKL134C	1.03	1.58	1.88	2.20	2.30	27.57	0.57	92.12	18.01	119.69	18.58	174.19
YKL135C	1.00	1.15	1.13	1.07	1.04	182.19	191.50	164.54	163.82	346.74	355.33	519.93
YKL137W	1.04	1.76	1.90	2.15	2.24	13.71	0.58	69.67	20.87	83.38	21.45	144.16
YKL138C	0.99	1.42	1.61	1.91	2.12	88.99	29.20	138.08	74.25	227.07	103.44	277.50
YKL138C	0.95	1.09	1.06	0.98	0.97	135.12	133.88	164.33	126.41	299.45	260.29	526.17
YKL140W	0.99	1.74	1.96	2.21	2.32	19.00	2.23	75.37	24.84	94.37	27.07	232.15
YKL146W	0.97	2.27	2.36	1.93	2.04	18.36	1.80	76.78	28.50	95.14	30.31	160.47
YKL148C	1.01	1.90	2.15	2.21	2.31	16.39	0.72	74.34	19.13	90.73	19.85	161.99
YKL159C	1.04	1.67	1.96	2.19	2.34	19.35	2.06	92.39	21.43	111.75	23.50	70.87
YKL161C	1.05	1.81	2.09	2.30	2.40	23.64	2.48	94.37	23.71	118.01	26.19	262.23
YKL162C	0.93	1.47	1.73	1.88	1.99	18.09	0.61	73.74	17.53	91.82	18.14	133.37
YKL164C	1.00	1.19	1.37	1.73	1.76	12.29	0.88	66.90	20.13	79.19	21.01	120.25
YKL166C	0.95	1.69	1.97	2.19	2.29	22.39	0.73	80.40	22.90	102.79	23.63	137.99
YKL167C	0.94	1.56	1.85	2.02	2.13	22.57	3.28	80.40	32.56	102.97	35.84	191.47
YKL168C	1.01	1.49	1.70	2.04	2.10	14.93	0.96	77.10	18.73	92.03	19.69	72.83
YKL171W	0.94	1.51	1.72	2.09	2.14	18.52	1.35	91.74	21.52	110.26	22.86	177.85
YKL174C	0.97	1.64	1.95	2.24	2.35	22.40	3.06	79.03	32.06	101.43	35.12	165.10
YKL175W	0.96	1.51	1.81	2.25	2.32	25.91	3.05	96.31	34.45	122.22	37.49	54.93
YKL176C	1.00	1.75	2.07	2.31	2.42	33.45	7.20	91.77	45.76	125.22	52.96	171.30
YKL178C	1.02	1.54	1.86	2.17	2.26	26.63	3.31	86.40	30.51	113.03	33.82	130.17
YKL188C	0.96	1.52	1.88	2.19	2.31	23.38	1.45	83.10	23.11	106.48	24.56	145.11
YKL197C	0.96	1.55	1.94	2.20	2.39	29.27	3.31	90.84	34.93	120.12	38.25	163.93
YKL206C	1.04	1.67	1.93	2.16	2.29	23.95	2.14	88.13	24.75	112.08	26.88	179.18
YKL207W	1.01	1.72	1.99	2.21	2.30	20.28	0.87	78.51	18.21	98.79	19.08	176.05
YKL213C	1.00	1.75	2.01	2.20	2.30	16.95	0.09	70.66	9.12	87.61	9.21	312.08
YKL214C	0.98	1.66	1.93	2.19	2.28	22.56	0.94	80.14	18.93	102.69	19.87	158.45
YKL215C	0.99	1.72	2.01	2.25	2.36	24.03	1.36	82.71	20.47	106.74	21.84	132.16
YKL216W	1.02	1.07	1.06	1.13	1.09	169.06	190.00	186.13	173.86	355.18	363.86	511.70
YKL218C	0.95	1.72	2.02	2.27	2.36	18.17	0.87	77.24	18.39	95.41	19.26	154.41
YKL220C	0.99	1.86	2.23	2.30	2.38	13.03	2.27	86.72	23.22	99.74	25.49	205.72
YKL221W	0.94	1.60	1.57	1.91	2.01	20.08	0.96	78.71	20.06	98.79	21.02	132.42
YKL222C	0.91	1.56	1.85	2.23	2.29	19.66	1.33	90.01	29.58	109.67	30.91	84.86
YKR001C	0.98	1.50	1.68	2.00	2.18	20.45	4.67	73.64	36.55	94.08	41.22	132.82
YKR005C	0.95	1.65	1.93	2.21	2.28	22.58	0.67	79.79	16.31	102.37	16.98	170.55
YKR006C	0.96	1.62	1.95	2.21	2.32	24.18	1.67	83.78	22.41	107.96	24.08	154.51
YKR007W	0.96	1.53	1.83	2.19	2.28	47.59	18.99	112.00	67.19	159.59	86.18	237.45
YKR009C	0.91	1.53	1.88	2.20	2.29	23.47	2.42	83.20	31.39	106.67	33.81	172.95
YKR010C	0.91	1.07	1.05	0.88	0.98	154.80	140.99	179.22	122.60	334.02	263.59	517.58
YKR011C	0.98	1.63	1.80	2.07	2.15	17.14	0.86	78.33	17.96	95.47	18.82	162.98
YKR013W	1.00	1.73	2.00	2.23	2.31	18.39	0.70	73.82	15.86	92.21	16.56	175.48
YKR015C	0.96	1.60	1.86	2.13	2.21	15.47	1.62	72.33	22.05	87.80	23.68	185.71
YKR019C	0.90	1.43	1.76	2.17	2.23	24.49	1.85	99.18	36.26	123.67	38.11	123.33
YKR020W	1.08	1.45	1.68	2.05	2.12	14.61	0.98	75.51	24.75	90.12	25.73	119.22
YKR026C	0.99	1.63	1.90	2.18	2.25	16.50	4.25	74.08	36.58	90.58	40.84	179.73
YKR027W	0.96	1.55	1.80	2.08	2.20	10.56	2.75	47.99	29.20	58.56	31.95	136.98
YKR028W	1.06	1.56	1.81	2.09	2.14	25.67	8.24	101.81	63.76	127.48	72.00	129.64
YKR034W	0.95	1.62	1.82	2.14	2.30	21.13	4.94	80.56	37.33	101.69	42.27	150.44
YKR036C	0.92	1.46	1.73	2.05	2.13	16.25	2.39	79.98	25.99	96.23	28.38	144.21
YKR039W	1.00	1.54	1.83	2.16	2.31	34.17	8.36	123.99	56.42	158.17	64.79	139.59
YKR046C	0.98	1.45	2.37	1.77	1.89	27.93	3.29	94.41	34.31	122.34	37.60	377.30
YKR051W	0.96	1.63	1.86	2.13	2.20	12.98	0.61	65.73	15.41	78.71	16.02	199.49
YKR052C	0.92	1.57	1.88	2.18	2.24	16.96	3.43	77.54	27.59	94.50	31.01	160.58
YKR053C	0.97	1.52	1.83	2.22	2.25	17.68	1.24	84.21	28.61	101.89	29.85	116.51
YKR054C	0.94	1.53	1.81	2.14	2.25	15.29	1.94	74.02	26.89	89.30	28.83	174.04
YKR055W	1.08	1.80	2.05	2.35	2.38	15.03	0.30	83.10	16.83	98.13	17.13	96.32
YKR056W	1.07	1.49	1.75	2.12	2.17	12.45	0.99	73.49	23.85	85.94	24.84	85.50
YKR058W	0.96	1.63	1.95	2.24	2.32	20.25	1.91	80.86	25.43	101.11	27.34	171.85
YKR059W	0.91	1.43	1.73	2.09	2.20	20.79	2.90	79.63	29.56	100.42	32.46	234.39
YKR060W	0.93	1.54	1.92	2.21	2.32	23.20	1.83	88.43	29.22	111.63	31.05	151.23
YKR061W	1.01	1.75	2.05	2.23	2.33	21.53	0.76	103.00	18.05	124.53	18.81	173.35
YKR064W	0.99	1.61	1.90	2.24	2.28	27.60	7.37	114.08	52.59	141.69	59.96	106.76
YKR066C	0.96	1.69	1.96	2.19	2.28	14.57	0.44	75.27	13.83	89.84	14.27	254.98
YKR067W	1.02	1.56	1.91	2.32	2.35	19.46	2.51	83.66	36.51	103.11	39.02	-6.26
YKR070W	0.99	1.76	1.89	2.14	2.22	17.19	1.24	76.57	19.32	93.76	20.56	209.50
YKR072C	0.94	1.56	1.83	2.20	2.26	21.09	1.56	91.04	31.90	112.13	33.46	100.30
YKR076W	0.96	1.44	1.69	2.06	2.11	16.34	1.76	83.16	32.53	99.50	34.29	96.48
YKR077W	0.97	1.64	1.94	2.25	2.32	16.98	1.15	75.95	18.80	92.93	19.95	182.03
YKR078W	0.95	1.67	1.96	2.23	2.30	16.39	1.46	73.58	24.53	89.96	26.00	137.17
YKR080W	0.96	1.38	1.58	1.91	2.13	85.51	30.12	141.69	80.29	227.20	110.41	240.28
YKR080W	0.85	0.98	0.98	0.92	0.87	164.84	154.64	185.20	141.41	350.04	296.05	532.55
YKR082W	1.00	1.94	1.84	2.31	2.23	15.64	1.95	72.23	19.99	87.87	21.94	82.95
YKR084C	0.94	1.52	1.84	2.19	2.29	25.22	7.27	92.74	46.36	117.96	53.62	123.90
YKR087C	0.96	1.68	2.01	2.29	2.36	21.04	1.27	90.62	19.95	111.67	21.22	139.35
YKR088C	0.96	1.66	1.76	2.02	2.11	14.60	-0.05	74.94	9.19	89.55	9.14	182.15
YKR089C	0.96	1.69	1.99	2.18	2.27	19.17	1.05	85.47	20.99	104.64	22.05	205.51
YKR093W	0.96	1.41	1.69	2.02	2.22	42.90	2.68	127.21	28.00	170.11	30.68	145.37
YKR094C	0.97	1.38	1.71	2.08	2.24	51.71	7.64	137.88	51.40	189.59	59.05	188.89
YKR097W	0.94	1.67	1.93	2.18	2.26	21.41	0.88	98.92	17.40	120.33	18.28	245.49
YKR098C	0.91	1.57	1.96	2.29	2.28	19.30	1.82	77.04	23.62	96.34	25.44	168.90
YKR099W	1.01	1.61	1.93	2.20	2.22	24.41	6.02	95.07	45.54	119.48	51.56	85.96
YKR100C	0.95	1.63	1.94	2.29	2.33	18.71	1.07	88.46	27.41	107.17	28.47	126.34
YKR101W	0.91	1.53	1.82	2.10	2.18	22.74	2.19	98.47	15.59	121.22	17.78	187.86
YLL001W	0.93	1.67	1.82	2.16	2.24	22.34	4.38	82.19	32.62	104.53	37.00	213.18
YLL002W	0.93	1.32	1.62	1.81	1.98	41.59	13.26	103.97	54.04	145.56	67.30	254.33
YLL007C	0.96	1.70	2.02	2.22	2.26	81.70	50.40	170.21	107.14	251.90	157.54	213.19
YLL010C	0.92	1.48	1.81	2.22	2.26	19.66	0.85	87.49	27.93	107.15	28.78	159.62
YLL013C	0.91	1.43	1.74	2.07	2.16	33.81	4.63	119.47	34.91	153.27	39.54	163.53
YLL014W	0.96	1.64	1.99	2.27	2.40	26.42	1.68	107.77	22.09	134.19	23.77	167.47
YLL016W	0.88	1.43	1.78	2.20	2.26	24.26	0.91	95.75	28.79	120.02	29.70	93.83
YLL019C	1.04	1.78	2.05	2.33	2.36	13.44	1.01	66.14	24.73	79.59	25.74	90.24
YLL023C	0.98	1.82	2.09	2.37	2.42	16.07	0.44	79.35	21.14	95.42	21.58	144.82
YLL024C	1.01	1.64	1.94	2.29	2.35	18.18	0.97	91.77	26.40	109.95	27.37	79.96
YLL028W	0.95	1.53	1.87	2.25	2.28	19.99	2.60	97.83	40.27	117.82	42.87	88.13
YLL029W	0.89	1.32	1.62	1.97	2.14	29.02	2.68	101.85	32.92	130.87	35.60	188.42
YLL038C	0.99	1.75	1.89	2.12	2.19	15.58	0.52	84.28	15.44	99.86	15.96	179.30
YLL039C	1.00	1.40	1.69	2.00	2.07	17.10	0.17	99.56	26.29	116.65	26.46	71.76
YLL045C	1.00	1.52	1.82	2.18	2.30	37.22	2.53	110.13	30.98	147.35	33.51	210.27
YLL046C	0.99	1.70	1.98	2.19	2.29	26.81	1.78	98.59	24.34	125.40	26.12	183.20
YLL051C	0.99	1.49	1.74	2.09	2.18	13.31	1.01	73.90	26.98	87.21	27.99	224.92
YLL052C	0.99	1.46	1.74	2.14	2.20	17.47	1.28	97.19	27.19	114.65	28.47	110.54
YLL053C	0.98	1.68	1.95	2.17	2.29	22.94	0.70	98.39	15.82	121.33	16.52	164.22
YLL054C	0.91	1.46	1.68	2.10	2.17	19.73	1.26	87.49	30.73	107.23	31.99	34.20
YLL055W	1.02	1.47	1.68	2.03	2.20	33.55	3.61	100.24	31.74	133.79	35.35	29.82
YLL056C	0.90	1.48	1.76	2.06	2.17	24.66	1.29	107.59	19.25	132.25	20.54	156.09
YLL057C	0.91	1.52	1.80	2.10	2.18	16.75	0.55	77.52	16.68	94.27	17.23	192.05
YLL058W	0.94	1.32	1.44	1.78	1.91	14.87	0.48	74.61	21.25	89.48	21.72	135.31
YLL061W	0.94	1.74	1.50	1.80	1.93	15.83	1.96	77.07	33.44	92.89	35.40	127.27
YLL062C	1.00	1.56	1.70	2.01	2.11	18.03	1.57	77.12	15.26	95.15	16.84	180.12
YLL063C	0.91	1.70	1.76	1.96	2.06	19.71	1.31	82.07	19.11	101.77	20.42	194.39
YLR003C	0.97	1.68	2.01	2.26	2.34	29.07	2.32	110.01	27.15	139.08	29.47	175.02
YLR004C	0.99	1.82	1.90	2.19	2.30	25.83	2.24	105.52	23.67	131.35	25.91	160.11
YLR006C	0.99	1.60	1.89	2.28	2.33	12.17	1.13	69.13	21.68	81.30	22.80	120.75
YLR011W	0.92	1.50	1.88	2.18	2.32	26.00	1.06	108.84	22.70	134.84	23.76	145.12
YLR012C	0.89	1.57	1.89	2.12	2.30	22.63	0.69	96.26	18.16	118.89	18.85	135.89
YLR013W	1.04	1.77	1.84	2.15	2.25	14.71	1.52	68.63	24.32	83.34	25.83	130.31
YLR018C	0.97	1.68	1.97	2.19	2.29	23.66	0.45	103.56	15.59	127.22	16.03	165.39
YLR021W	0.96	1.79	2.07	2.27	2.34	32.73	3.67	117.15	32.38	149.88	36.06	202.52
YLR027C	0.99	1.63	1.93	2.27	2.34	8.44	-0.14	50.91	10.50	59.35	10.37	225.42
YLR028C	0.95	1.58	1.83	2.06	2.18	23.98	0.76	97.83	15.10	121.81	15.86	170.74
YLR030W	0.97	1.77	2.22	2.21	2.37	26.53	1.33	103.54	21.16	130.07	22.48	180.21
YLR031W	0.94	1.70	1.96	2.19	2.30	26.10	1.13	106.34	20.13	132.45	21.26	170.48
YLR032W	0.93	1.53	1.80	2.10	2.26	29.21	3.53	99.76	34.84	128.97	38.37	153.08
YLR040C	0.88	1.29	1.53	1.94	1.99	20.85	1.39	87.99	30.98	108.84	32.37	126.70
YLR052W	1.00	1.45	1.62	2.00	2.17	30.90	2.27	91.73	27.86	122.63	30.13	233.60
YLR053C	0.91	1.77	1.85	1.99	2.09	22.20	1.52	91.91	24.69	114.11	26.22	174.19
YLR058C	0.98	1.26	1.24	1.13	1.19	161.17	178.36	185.89	139.25	347.05	317.62	534.30
YLR062C	0.99	1.48	1.79	2.23	2.27	23.95	2.89	86.99	38.67	110.94	41.56	188.65
YLR070C	0.93	1.66	1.97	2.23	2.37	31.30	2.92	107.91	31.86	139.21	34.78	187.98

ORF	Optical density at 600 nm at time intervals (h)					GLUCOSE		FRUCTOSE		TOTAL Sugars(g/L)		TOTAL AMINO ACIDS (mg/L)
	0	20	27	42	67	43 h	67 h	43 h	67 h	43 h	67 h	48 h
YLR072W	0.89	1.72	1.75	2.06	2.14	30.18	1.58	108.74	24.53	138.92	26.11	147.24
YLR073C	0.88	1.43	1.78	2.09	2.23	25.27	0.94	108.36	22.25	133.62	23.19	169.67
YLR081W	0.91	1.43	1.76	2.18	2.23	15.16	3.44	80.26	37.79	95.41	41.23	58.01
YLR084C	0.91	1.38	1.70	2.14	2.19	17.47	2.61	73.55	34.88	91.02	37.48	134.81
YLR089C	0.89	0.93	0.91	0.97	0.90	168.29	227.07	170.87	174.28	339.16	401.35	520.04
YLR090W	1.01	1.74	2.04	2.24	2.35	16.78	0.40	83.04	16.29	99.82	16.69	164.43
YLR095C	0.99	1.72	2.00	2.22	2.31	12.67	-0.07	77.12	11.03	89.78	10.95	206.35
YLR096W	0.87	1.15	1.47	1.97	2.06	33.27	2.27	109.19	31.00	142.46	33.26	177.15
YLR097C	0.95	1.53	1.61	1.91	2.00	23.46	1.00	103.91	19.61	127.37	20.61	182.41
YLR121C	0.94	1.43	1.78	2.22	2.30	26.82	6.18	99.03	51.38	125.85	57.56	201.57
YLR128W	1.01	1.59	1.69	1.99	2.22	16.96	1.15	81.55	26.69	98.51	27.84	127.64
YLR130C	1.02	1.79	1.98	2.22	2.28	15.03	1.36	66.38	28.50	81.41	29.87	97.77
YLR144C	0.98	1.64	1.92	2.16	2.26	23.63	0.41	104.33	15.84	127.96	16.25	229.82
YLR149C	0.99	1.65	1.96	2.20	2.31	20.35	0.78	87.64	17.89	108.00	18.67	216.92
YLR150W	0.98	1.73	2.05	2.29	2.37	22.87	2.14	91.99	28.30	114.86	30.45	180.41
YLR151C	0.99	1.60	1.93	2.18	2.33	24.79	1.98	92.64	29.72	117.43	31.70	183.03
YLR152C	0.97	1.70	1.99	2.20	2.36	21.92	1.51	92.80	24.77	114.72	26.27	183.28
YLR164W	0.97	1.70	2.02	2.26	2.36	27.08	1.30	118.44	14.81	145.52	16.11	174.62
YLR165C	0.93	1.49	1.90	2.07	2.16	31.06	1.94	119.47	19.10	150.53	21.04	186.89
YLR170C	1.02	1.67	1.92	2.19	2.29	22.71	2.22	102.68	20.83	125.39	23.05	215.79
YLR172C	1.01	1.68	2.13	2.08	2.26	40.82	2.70	132.79	25.58	173.61	28.28	179.73
YLR173W	0.99	1.72	2.02	2.27	2.34	29.90	2.35	117.61	18.07	147.51	20.42	177.15
YLR174W	0.95	1.54	1.83	2.14	2.24	33.58	2.51	111.35	21.12	144.93	23.63	174.60
YLR178C	1.06	1.78	2.09	2.35	2.42	41.67	2.96	126.47	21.09	168.14	24.05	226.31
YLR179C	0.96	1.11	1.08	1.03	1.01	254.19	153.29	198.26	176.44	452.45	329.74	523.08
YLR181C	1.03	1.66	1.94	2.12	2.21	26.10	3.11	94.99	21.26	121.09	24.37	124.72
YLR185W	0.98	1.27	1.45	1.93	2.23	64.71	10.93	143.09	48.88	207.81	59.81	132.20
YLR187W	1.01	1.70	1.91	2.18	2.28	17.47	0.42	76.13	15.84	93.60	16.26	235.49
YLR188W	0.97	1.57	1.84	2.15	2.24	39.18	2.86	121.20	23.77	160.38	26.63	102.13
YLR189C	0.99	1.59	1.89	2.16	2.30	44.95	3.49	142.05	28.95	187.00	32.44	122.09
YLR191W	1.02	1.76	1.86	2.14	2.25	36.25	1.48	118.76	16.91	155.01	18.40	213.49
YLR193C	1.00	1.71	1.97	2.22	2.30	40.07	2.32	130.78	23.94	170.84	26.26	194.85
YLR199C	1.02	1.71	1.74	2.06	2.16	29.53	2.83	100.22	27.71	129.75	30.55	216.41
YLR200W	1.02	1.68	1.91	2.15	2.34	62.68	3.96	144.40	38.11	207.09	42.07	454.34
YLR204W	0.95	1.65	1.92	2.18	2.27	37.57	2.46	126.79	22.62	164.36	25.08	376.22
YLR205C	0.97	1.69	1.97	2.25	2.33	41.64	2.99	121.84	26.68	163.48	29.67	199.99
YLR207W	1.05	1.79	2.02	2.27	2.37	22.95	2.59	89.52	28.86	112.47	31.46	178.70
YLR211C	1.02	1.78	2.09	2.32	2.40	25.72	2.62	97.08	25.67	122.81	28.29	191.45
YLR213C	1.00	1.72	2.03	2.29	2.37	-0.30	3.54	-1.26	31.48	-1.56	35.02	154.79
YLR214W	1.00	1.80	1.72	2.07	2.23	19.56	1.75	73.93	28.52	93.49	30.27	138.23
YLR218C	0.98	1.67	2.01	2.30	2.38	33.73	2.88	125.04	25.03	158.77	27.91	179.45
YLR219W	0.94	1.50	1.79	2.09	2.20	54.50	2.72	175.44	25.15	229.94	27.87	211.29
YLR220W	0.99	1.64	1.96	2.25	2.35	53.04	3.25	167.57	26.68	220.61	29.93	180.33
YLR221C	0.99	1.90	1.71	2.08	2.17	38.10	4.92	136.63	37.47	174.74	42.39	154.20
YLR224W	1.02	1.68	1.94	2.23	2.30	34.13	2.02	116.55	20.37	150.68	22.39	188.84
YLR225C	0.98	1.56	1.82	2.14	2.22	43.18	2.98	127.82	26.68	170.99	29.66	202.14
YLR227C	0.99	1.36	1.42	1.74	1.84	34.77	2.62	98.98	25.29	133.75	27.91	187.99
YLR227W-A	0.93	0.98	0.96	1.00	0.92	149.52	139.54	171.02	132.93	320.53	272.47	525.59
YLR228C	0.91	1.43	1.76	2.19	2.24	21.29	1.14	79.38	25.48	100.67	26.62	206.15
YLR238W	0.98	1.60	1.87	2.18	2.27	34.47	2.78	99.24	29.81	133.71	32.60	181.72
YLR239C	0.98	1.11	1.09	1.05	1.02	198.95	153.11	221.57	201.06	420.52	354.17	525.73
YLR246W	0.99	1.74	1.83	2.09	2.19	53.84	17.93	119.67	75.28	173.51	93.21	214.21
YLR251W	0.99	1.57	1.86	2.15	2.25	28.70	3.71	89.94	35.75	118.63	39.45	206.77
YLR253W	1.03	1.74	1.78	2.13	2.21	41.46	3.30	124.18	33.01	165.64	36.31	210.68
YLR254C	1.00	1.72	1.79	2.13	2.22	34.71	2.62	107.27	29.18	141.97	31.80	168.42
YLR258W	0.94	1.44	1.72	2.04	2.16	33.52	3.36	102.62	32.64	136.14	36.00	189.63
YLR260W	0.94	0.98	0.97	1.02	0.94	191.83	192.17	189.44	163.19	381.27	355.37	523.73
YLR262C-A	0.95	1.45	1.75	2.10	2.20	35.58	2.94	122.38	31.92	157.97	34.85	161.42
YLR265C	1.04	1.93	1.84	2.13	2.23	18.42	1.47	80.40	15.01	98.82	16.48	121.68
YLR267W	0.97	1.59	1.87	2.17	2.23	34.14	1.84	113.27	18.96	147.40	20.79	203.45
YLR270W	1.01	1.65	1.72	2.03	2.17	34.50	2.04	116.45	29.81	150.94	31.86	183.25
YLR281C	0.99	1.60	1.85	2.05	2.18	32.32	2.63	103.95	26.79	136.27	29.42	212.45
YLR283W	1.00	1.84	1.63	1.97	2.11	30.56	3.86	87.72	35.89	118.28	39.75	264.37
YLR285C-A	0.97	1.47	1.70	1.99	2.07	34.50	4.47	100.26	38.74	134.77	43.21	181.82
YLR285W	0.99	1.57	1.85	2.19	2.26	-0.31	2.97	-1.24	36.47	-1.55	39.44	234.10
YLR286C	1.00	1.52	1.85	2.24	2.34	-0.34	3.71	-1.40	38.97	-1.74	42.68	119.96
YLR288C	0.97	1.60	1.88	2.03	2.15	36.45	1.80	112.62	21.49	149.07	23.29	138.16
YLR292C	0.96	1.44	1.67	1.99	2.13	35.01	1.81	107.39	20.97	142.40	22.78	251.37
YLR293C	0.92	0.96	0.95	1.01	0.93	189.07	197.13	172.57	165.03	361.64	362.15	522.72
YLR294C	0.90	1.16	1.37	1.82	1.88	20.45	1.70	75.84	24.37	96.28	26.07	60.11
YLR297W	0.98	1.56	1.81	2.12	2.20	55.71	2.95	149.52	35.54	205.22	38.50	175.98
YLR300W	0.98	1.31	1.48	1.99	2.16	18.86	2.71	82.48	29.27	101.34	31.98	147.70
YLR304C	0.93	1.38	1.67	2.12	2.19	19.09	2.29	69.07	27.39	88.16	29.68	56.55
YLR307C-A	0.99	1.79	1.90	2.19	2.27	30.82	2.12	101.03	26.96	131.85	29.08	187.93
YLR309C	0.95	1.44	1.72	2.13	2.22	19.33	2.88	77.68	34.57	97.01	37.45	147.84
YLR312C	0.93	1.56	1.87	2.19	2.26	27.52	2.97	82.97	33.30	110.50	36.27	193.62
YLR313C	0.93	1.47	1.73	2.07	2.17	32.48	4.90	93.80	47.12	126.28	52.02	203.10
YLR319C	0.97	1.62	1.49	1.84	1.96	28.74	4.11	89.27	43.00	118.01	47.11	181.39
YLR325C	0.98	1.36	1.52	1.91	1.96	17.90	2.13	87.96	30.10	105.86	32.23	151.97
YLR326W	0.97	1.61	1.91	2.22	2.30	23.28	3.98	77.74	39.86	101.02	43.85	205.10
YLR332W	1.00	1.70	1.97	2.25	2.41	44.00	7.07	92.25	46.20	136.26	53.27	239.94
YLR333C	1.00	1.83	2.11	2.30	2.41	30.21	5.31	79.94	39.49	110.15	44.80	187.93
YLR335W	1.08	1.91	2.20	2.39	2.49	28.27	4.59	75.95	32.95	104.22	37.55	165.99
YLR363C	1.10	2.02	2.08	2.26	2.34	13.68	0.83	69.25	19.05	82.93	19.88	141.39
YLR368W	0.98	1.69	1.99	2.14	2.38	27.69	3.76	79.15	35.08	106.84	38.84	186.95
YLR375W	1.00	1.06	1.03	1.08	1.01	160.11	167.32	183.52	152.63	343.63	319.95	526.41
YLR388W	1.07	1.50	1.81	2.23	2.47	66.86	8.64	120.15	58.18	187.01	66.82	245.22
YLR390W	0.91	1.38	1.42	1.81	1.88	16.08	1.76	75.66	24.62	91.74	26.38	156.92
YLR395C	0.94	1.38	1.28	1.52	1.63	17.12	1.45	76.10	21.10	93.22	22.55	96.91
YLR406C	0.92	0.96	0.94	0.99	0.92	164.37	165.29	193.19	163.81	357.55	329.09	527.98
YLR413W	0.95	1.53	1.83	2.22	2.29	12.70	0.03	70.07	6.98	82.77	7.01	355.30
YLR417W	0.88	1.22	1.42	1.75	1.80	23.46	3.57	97.22	55.19	120.67	58.77	286.26
YLR425W	0.94	1.26	1.50	1.97	2.05	24.64	4.00	90.66	38.20	115.29	42.20	68.98
YLR447C	0.93	1.27	1.49	1.94	2.02	24.72	1.81	89.54	25.00	114.26	26.81	103.63
YLR448W	0.85	0.97	1.09	1.58	1.73	40.13	7.51	114.35	50.07	154.48	57.59	125.39
YLR452C	0.91	1.27	1.73	2.30	2.17	23.60	4.68	88.96	28.11	112.56	32.78	82.59
YML022W	0.99	1.49	1.66	1.99	2.10	18.21	1.08	101.46	23.28	119.67	24.36	46.99
YML027W	0.94	1.48	1.72	2.09	2.15	14.76	0.60	82.72	17.87	97.47	18.47	89.60
YML052W	0.94	1.43	1.69	2.10	2.14	16.67	0.66	82.63	19.56	99.31	20.22	188.53
YML053C	0.91	2.08	1.57	1.82	1.92	10.21	0.80	71.24	17.35	81.45	18.15	279.58
YML076C	0.93	1.44	1.43	1.76	1.89	16.01	1.18	76.04	20.49	92.05	21.67	101.86
YML109W	0.91	1.24	1.47	1.93	2.02	13.13	2.12	57.18	25.86	70.31	27.98	99.99
YMR015C	0.89	0.93	0.91	0.96	0.89	152.53	203.54	183.08	187.71	335.62	391.26	517.34
YMR025W	0.91	1.17	1.36	1.84	1.92	19.52	1.47	87.14	22.99	106.66	24.46	100.07
YMR029C	1.03	1.85	2.09	2.34	2.36	10.63	-0.03	77.65	2.98	88.28	2.95	273.96
YMR030W	1.04	1.73	1.84	2.14	2.25	15.53	0.34	85.76	15.19	101.30	15.53	257.97
YMR032W	1.00	1.06	1.04	1.08	1.02	156.96	147.66	183.32	149.99	340.28	297.65	526.19
YMR042W	0.94	1.48	1.73	2.07	2.14	17.20	0.53	86.91	21.32	104.10	21.85	111.00
YMR053C	0.91	0.96	0.93	0.98	0.91	158.13	158.57	173.24	155.94	331.37	314.51	527.10
YMR054W	0.88	0.93	0.90	0.94	0.87	154.30	187.67	174.97	169.16	329.27	356.83	523.65
YMR055W	0.93	1.28	1.48	1.90	2.00	17.31	1.73	83.36	24.30	100.67	26.03	163.04
YMR073C	0.96	1.62	1.94	2.23	2.31	33.73	4.50	102.60	40.70	136.33	45.20	183.70
YMR075W	1.01	1.79	1.85	2.16	2.25	33.08	4.53	106.97	46.86	140.04	51.50	156.78
YMR077C	0.92	1.44	1.73	2.06	2.17	41.07	3.21	122.04	34.39	163.12	37.60	183.44
YMR095C	0.90	2.07	1.52	2.11	1.98	17.90	2.07	78.91	21.62	96.81	23.69	169.55
YMR100W	0.91	0.96	0.94	0.99	0.92	174.53	149.42	189.79	149.04	364.32	298.46	527.05
YMR101C	0.91	1.51	1.86	2.17	2.29	26.83	2.38	90.95	29.87	117.78	32.25	175.89
YMR104C	0.87	0.92	0.89	0.95	0.88	167.79	209.21	195.94	189.19	363.73	398.40	530.13
YMR105W-A	0.99	1.62	1.74	2.05	2.15	21.99	1.50	93.04	14.98	115.03	16.48	157.71
YMR109W	0.99	1.76	1.98	2.26	2.33	26.44	2.62	97.10	25.24	123.54	27.85	145.61
YMR110C	0.98	1.67	1.86	2.02	2.14	28.47	2.21	104.07	27.37	132.54	29.58	247.95
YMR119W	0.86	0.90	0.88	0.94	0.88	146.51	196.66	162.99	174.94	309.51	371.60	528.13
YMR124W	0.99	1.64	1.67	2.01	2.10	28.69	2.05	95.45	25.93	124.14	27.98	189.23
YMR127C	0.91	1.50	1.80	2.08	2.15	27.58	2.47	84.46	25.73	112.04	28.19	196.11
YMR129W	0.92	1.43	1.73	2.10	2.18	32.25	3.28	95.21	36.96	127.46	40.23	190.33
YMR130W	0.94	1.54	1.83	2.13	2.21	20.30	2.12	74.26	23.48	94.56	25.60	249.65
YMR139W	0.92	1.28	1.55	2.04	2.16	24.49	1.34	98.24	22.66	122.73	24.01	48.66
YMR140W	0.99	1.46	1.84	1.93	2.01	0.28	14.10	-0.49	81.24	-0.21	95.35	279.60
YMR143W	1.04	1.37	1.62	2.03	2.29	-0.34	8.61	-1.46	68.29	-1.80	76.89	237.17
YMR145C	1.00	1.68	1.71	2.08	2.19	-0.17	3.29	-1.44	36.38	-1.61	39.67	182.89
YMR147W	0.94	1.51	1.80	2.09	2.25	0.99	2.80	2.81	35.57	3.80	38.37	192.57
YMR148W	0.91	1.42	1.74	2.07	2.20	0.06	2.96	-0.11	41.25	-0.05	44.21	167.45
YMR155W	0.98	1.69	1.94	2.20	2.31	25.13	1.57	94.91	22.64	120.04	24.21	164.72
YMR156C	1.00	1.85	1.98	2.24	2.32	26.14	5.95	99.28	32.55	125.42	38.50	187.24
YMR158C-A	1.01	1.68	1.96	2.23	2.30	28.15	2.16	94.11	26.47	122.25	28.63	173.30

ORF	Optical density at 600 nm at time intervals (h)					GLUCOSE		FRUCTOSE		TOTAL Sugars(g/L)		TOTAL AMINO ACIDS (mg/L)
	0	20	27	42	67	43 h	67 h	43 h	67 h	43 h	67 h	48 h
YMR160W	0.98	1.80	2.04	2.23	2.29	16.83	1.75	76.63	21.75	93.46	23.50	250.32
YMR161W	0.94	1.54	1.83	2.16	2.23	30.24	3.69	97.22	46.63	127.46	50.33	194.11
YMR162C	0.95	1.58	1.88	2.18	2.27	37.48	4.53	109.28	50.29	146.76	54.82	207.13
YMR169C	0.94	1.67	1.94	2.17	2.23	26.05	1.38	107.19	15.62	133.24	17.00	274.35
YMR171C	0.95	1.50	1.77	2.10	2.22	18.03	1.26	81.87	8.02	99.90	9.27	308.01
YMR173W	1.02	1.58	1.84	2.21	2.29	15.38	0.92	92.50	19.65	107.88	20.56	100.40
YMR174C	0.98	1.54	1.83	2.14	2.24	27.08	2.65	96.78	28.60	123.86	31.26	150.87
YMR176W	0.94	1.47	1.77	1.93	2.05	27.04	3.12	87.52	36.61	114.56	39.73	163.91
YMR181C	0.91	1.42	1.89	2.13	2.29	31.86	2.31	104.31	29.47	136.19	31.77	170.51
YMR182C	0.95	1.41	1.62	1.95	1.99	25.09	2.60	107.26	32.97	132.35	35.57	91.12
YMR189W	0.87	1.24	1.75	2.06	2.19	31.85	2.46	103.50	33.21	135.36	35.67	134.88
YMR198W	1.03	1.82	1.93	2.22	2.29	20.41	1.34	101.73	23.11	122.13	24.46	107.26
YMR199W	1.01	1.68	1.99	2.26	2.37	23.22	2.17	92.60	32.98	115.82	35.15	157.12
YMR201C	0.97	1.61	1.90	2.18	2.28	22.17	1.96	86.82	29.18	108.99	31.14	161.97
YMR202W	1.03	1.81	2.00	2.31	2.35	21.92	1.92	91.56	24.32	113.48	26.24	87.37
YMR204C	0.92	1.47	1.74	2.08	2.18	34.05	2.58	114.88	37.65	148.93	40.23	190.28
YMR205C	0.97	1.52	1.75	2.11	2.17	29.80	1.58	119.97	24.51	149.77	26.09	94.14
YMR214W	0.86	1.12	1.29	1.68	1.73	17.17	1.39	81.63	23.24	98.80	24.62	32.02
YMR215W	0.90	1.17	1.33	1.73	1.81	16.05	2.13	75.87	20.80	91.91	22.93	150.66
YMR216C	0.91	1.26	1.33	1.73	1.89	26.93	3.64	90.51	34.95	117.44	38.59	25.35
YMR221C	0.93	1.29	2.23	2.07	2.20	23.82	2.79	104.83	23.44	128.65	26.22	134.67
YMR222C	0.94	1.59	2.37	2.05	2.23	48.09	3.29	130.29	39.55	178.38	42.84	187.10
YMR225C	0.97	1.59	1.88	2.19	2.28	35.53	3.14	119.73	42.46	155.25	45.60	180.12
YMR226C	0.99	1.68	1.98	2.24	2.33	33.97	2.45	106.46	34.45	140.43	36.90	197.00
YMR228W	0.98	1.58	1.91	2.20	2.29	41.25	3.30	133.74	38.91	174.99	42.21	172.49
YMR230W	0.95	1.18	1.56	2.05	2.24	62.78	5.55	147.52	64.08	210.30	69.63	156.11
YMR232W	0.87	1.32	1.57	1.86	1.98	21.30	1.52	91.23	22.99	112.53	24.51	211.85
YMR233W	0.93	1.59	1.88	2.14	2.24	18.22	2.42	77.98	25.38	96.21	27.80	228.85
YMR234W	0.92	1.45	1.68	1.91	2.02	24.89	1.99	88.87	17.81	113.77	19.79	248.69
YMR238W	0.94	1.54	1.83	2.07	2.20	23.65	2.81	91.95	29.27	115.60	32.08	186.52
YMR243C	0.94	1.26	1.58	2.06	2.16	29.26	2.35	101.26	28.16	130.51	30.51	119.48
YMR246W	0.89	1.12	1.29	1.72	1.81	35.13	2.94	120.23	31.41	155.36	34.36	152.65
YMR251W-A	0.91	1.36	1.66	2.14	2.21	21.62	2.54	96.48	23.31	118.10	25.85	79.22
YMR252C	0.88	1.46	1.77	2.04	2.14	20.23	2.55	81.93	27.68	102.16	30.23	203.19
YMR254C	1.00	1.60	1.62	1.97	2.11	9.72	0.16	76.28	11.53	86.00	11.69	63.55
YMR255W	0.88	1.35	1.57	1.84	1.94	16.42	1.94	78.14	16.05	94.57	17.99	196.23
YMR257C	0.85	0.90	0.88	0.89	0.84	151.54	207.17	181.00	183.76	332.55	390.93	527.98
YMR258C	0.86	1.34	1.62	1.94	2.06	24.92	3.19	93.34	31.14	118.26	34.33	142.01
YMR259C	0.92	1.44	1.70	2.04	2.17	29.92	1.76	104.79	13.54	134.71	15.30	200.16
YMR261C	0.92	1.38	1.81	1.82	1.97	25.07	2.27	86.05	23.45	111.13	25.72	171.56
YMR262W	0.89	1.31	1.54	1.85	1.98	32.73	2.13	105.66	26.91	138.39	29.04	194.89
YMR263W	0.88	1.27	1.55	1.87	2.05	78.57	28.17	159.48	93.77	238.05	121.94	188.73
YMR265C	0.88	1.27	1.56	1.92	2.13	25.77	1.94	99.66	17.29	125.43	19.23	199.22
YMR266W	0.92	1.51	1.58	1.87	1.98	21.06	2.04	87.89	22.70	108.94	24.75	184.94
YMR269W	0.89	1.39	1.64	1.91	2.02	24.10	2.32	94.89	23.59	118.99	25.92	168.45
YMR271C	1.02	1.86	1.91	2.17	2.25	18.47	1.80	91.21	25.84	109.68	27.64	80.61
YMR272W-B	0.96	1.61	1.89	2.13	2.25	23.02	3.54	84.97	32.52	107.98	36.07	158.65
YMR273C	1.01	1.65	1.65	1.99	2.11	20.47	2.04	96.42	25.41	116.89	27.45	100.14
YMR275C	1.01	1.58	1.84	2.14	2.24	25.53	4.03	104.21	39.69	129.74	43.73	93.92
YMR276W	0.94	1.45	1.72	2.11	2.18	24.46	2.62	108.61	28.75	133.06	31.37	83.59
YMR279C	0.91	1.48	1.74	2.01	2.11	18.29	2.41	76.65	23.08	94.95	25.49	153.34
YMR283C	0.90	1.45	1.69	1.98	2.08	19.53	1.63	79.73	20.31	99.27	21.95	210.60
YMR285C	0.86	1.48	1.82	2.13	2.21	23.49	3.91	86.28	30.79	109.77	34.70	217.11
YMR289W	0.87	1.32	1.54	1.81	1.92	29.50	2.68	99.74	22.90	129.24	25.59	179.93
YMR291W	0.99	1.63	1.65	1.99	2.10	25.33	2.79	121.73	54.19	147.06	56.97	94.02
YMR294W	0.88	1.37	1.64	1.96	2.06	26.55	1.97	94.51	18.61	121.06	20.58	243.67
YMR300C	0.88	1.07	1.09	1.09	1.21	160.94	141.75	194.70	182.75	355.64	324.50	484.40
YMR302C	0.89	1.38	1.68	2.02	2.14	25.28	2.24	86.13	18.58	111.41	20.82	115.01
YMR304W	0.88	1.35	1.63	1.95	2.09	26.85	2.47	93.40	24.26	120.25	26.73	140.45
YMR310C	0.85	1.25	1.57	1.91	2.09	31.46	3.09	102.64	27.45	134.10	30.55	67.96
YMR313C	0.91	1.41	1.65	1.90	2.00	17.45	1.74	80.30	24.17	97.75	25.91	181.67
YMR317W	0.88	1.37	1.58	1.82	1.93	18.75	2.21	79.73	22.10	98.48	24.30	165.63
YMR318C	0.90	1.47	1.76	2.06	2.16	24.77	3.21	87.38	32.61	112.15	35.81	197.55
YNL008C	0.90	1.41	1.67	1.93	1.98	24.94	4.64	87.12	42.92	112.06	47.56	143.75
YNL022C	0.90	1.38	1.61	1.88	1.99	21.37	2.69	86.03	23.85	107.40	26.54	186.00
YNL023C	0.85	1.26	1.46	1.71	1.79	19.20	3.42	87.77	29.84	106.97	33.26	172.01
YNL024C	0.94	1.53	1.79	2.08	2.17	24.84	2.72	85.87	25.64	110.71	28.36	188.94
YNL029C	0.87	1.17	1.35	1.72	1.88	36.78	3.61	103.14	31.08	139.92	34.69	194.56
YNL030W	0.90	1.32	1.56	1.93	2.09	31.56	2.91	90.82	26.91	122.38	29.82	194.82
YNL031C	0.86	1.20	1.43	1.73	1.87	25.31	2.61	90.97	28.89	116.27	31.50	123.64
YNL032W	0.92	1.24	1.42	1.83	1.94	26.33	2.43	110.89	35.18	137.22	37.62	105.69
YNL034W	0.88	1.41	1.76	2.10	2.20	25.87	2.57	91.13	24.20	117.00	26.77	157.93
YNL037C	0.91	1.16	1.32	1.66	1.77	43.43	12.22	129.17	58.55	172.60	70.77	161.78
YNL041C	0.87	1.50	1.71	1.92	2.13	16.12	1.92	70.36	19.19	86.48	21.11	156.95
YNL042W	0.92	1.20	1.43	1.89	2.00	25.59	3.46	103.51	31.12	129.10	34.58	106.04
YNL042W-B	0.89	1.41	1.69	1.95	2.07	18.05	1.81	82.39	21.58	100.44	23.39	110.85
YNL044W	0.89	1.27	1.58	2.05	2.12	24.15	2.90	102.96	27.24	127.11	30.15	133.73
YNL045W	0.90	1.40	1.66	1.91	2.01	19.94	2.27	83.74	27.74	103.68	30.01	177.49
YNL046W	0.93	1.44	1.78	2.21	2.29	25.21	2.65	104.19	30.93	129.40	33.58	88.04
YNL049C	0.90	1.41	1.71	1.98	2.08	23.91	3.52	90.06	34.08	113.97	37.59	116.68
YNL050C	0.89	1.40	1.68	1.96	2.07	19.35	2.16	81.00	22.18	100.35	24.35	153.50
YNL051W	1.07	1.69	1.93	2.21	2.28	19.46	0.77	101.52	20.33	120.98	21.10	95.38
YNL052W	0.99	1.52	1.67	2.00	2.12	18.49	1.72	97.36	30.60	115.85	32.33	86.05
YNL053W	0.99	1.51	1.73	2.09	2.19	19.56	1.30	103.89	24.60	123.46	25.90	180.24
YNL054W	0.87	1.23	1.42	1.85	1.94	44.14	4.52	114.94	37.50	159.08	42.02	363.50
YNL056W	0.86	1.30	1.58	1.93	2.04	22.47	2.33	92.47	19.16	114.94	21.49	163.29
YNL057W	1.05	1.68	1.85	2.16	2.24	20.58	1.80	106.29	24.86	126.87	26.66	95.74
YNL058C	0.92	1.46	1.76	2.08	2.18	20.58	2.89	83.30	31.69	103.88	34.57	146.83
YNL059C	0.89	1.58	1.96	2.13	2.31	24.10	2.36	86.66	25.44	110.76	27.79	208.85
YNL066W	1.02	1.49	1.72	2.10	2.22	31.20	2.11	124.71	28.84	155.91	30.96	119.70
YNL068C	0.91	1.44	1.73	1.97	2.07	19.17	1.87	82.41	24.57	101.58	26.44	114.43
YNL070W	1.00	1.42	1.59	1.97	2.10	33.49	3.32	113.41	34.66	146.90	37.98	118.62
YNL072W	0.87	0.99	1.02	0.93	0.91	190.36	142.22	205.21	176.30	395.57	318.52	522.75
YNL073W	0.97	1.30	1.47	1.86	1.93	29.29	3.41	125.97	30.37	155.26	33.78	97.44
YNL074C	1.02	1.44	1.69	2.15	2.26	26.82	3.10	106.35	34.38	133.17	37.47	104.71
YNL076W	0.93	1.59	1.93	2.16	2.24	18.63	2.62	74.84	33.15	93.47	35.78	90.34
YNL077W	0.87	1.21	1.56	1.76	1.91	30.89	8.16	97.33	66.67	128.22	74.84	140.72
YNL078W	1.00	1.80	1.92	2.11	2.19	7.32	0.04	57.74	4.13	65.05	4.17	9.93
YNL082W	0.85	1.48	1.91	2.10	2.20	25.31	3.29	91.17	32.84	116.47	36.13	162.64
YNL083W	0.84	1.30	1.68	1.81	1.90	25.46	2.81	91.37	27.94	116.82	30.76	173.69
YNL084C	1.01	1.24	1.62	1.58	1.80	62.03	13.77	133.56	71.39	195.59	85.17	258.59
YNL085W	0.87	1.30	1.58	1.91	2.02	17.34	1.92	74.06	13.05	91.40	14.98	230.71
YNL086W	0.88	1.29	1.53	1.83	1.95	24.94	2.36	84.14	25.26	109.08	27.62	171.51
YNL090W	0.91	1.33	1.65	1.98	1.99	17.63	2.25	62.20	21.41	79.84	23.66	119.07
YNL090W	1.07	1.11	1.10	1.13	1.08	146.09	224.28	181.65	179.81	327.74	404.09	508.78
YNL091W	0.87	1.38	1.73	2.03	2.13	32.90	4.47	102.52	46.89	135.42	51.36	162.09
YNL093W	0.89	1.77	2.07	2.24	2.36	16.57	1.69	83.56	23.59	100.13	25.29	71.81
YNL094W	0.92	1.54	1.89	2.19	2.22	21.79	1.97	69.21	18.93	90.99	20.90	135.86
YNL094W	1.07	1.12	1.10	1.14	1.08	191.03	184.05	195.24	170.72	386.26	354.77	519.47
YNL095C	0.81	1.26	1.60	1.93	2.09	26.58	3.70	94.59	31.37	121.17	35.07	161.94
YNL096C	0.91	1.43	1.81	2.20	2.29	28.90	4.35	86.48	34.13	115.37	38.49	124.58
YNL096C	1.07	1.12	1.10	1.14	1.09	157.76	191.83	191.02	168.28	348.77	360.10	512.61
YNL097C	0.83	1.16	1.40	1.72	1.95	44.82	8.36	121.12	72.49	165.94	80.85	123.48
YNL101W	0.91	1.21	1.65	1.86	1.98	17.14	1.89	85.39	23.88	102.53	25.77	155.71
YNL104C	0.87	1.14	1.59	1.78	1.90	16.76	2.19	74.26	30.79	91.02	32.98	95.65
YNL108C	0.90	1.18	1.62	1.81	1.92	16.55	2.57	71.86	33.18	88.42	35.76	98.75
YNL111C	0.88	1.13	1.62	1.88	2.00	26.03	2.75	92.37	33.07	118.41	35.82	199.41
YNL115C	0.86	1.14	1.61	1.89	2.02	20.84	2.66	85.09	28.58	105.92	31.24	132.27
YNL116W	0.94	1.48	1.82	2.12	2.24	23.38	2.38	82.89	18.76	106.28	21.14	157.26
YNL116W	0.96	1.01	0.98	1.01	0.95	148.78	190.89	160.74	172.59	309.51	363.48	514.95
YNL121C	0.94	1.59	1.97	2.21	2.37	25.18	2.26	84.34	20.34	109.53	22.60	134.21
YNL121C	1.00	1.06	1.03	1.06	1.01	153.89	161.95	165.16	138.98	319.05	300.93	511.65
YNL122C	0.85	1.12	1.72	1.96	2.11	26.85	4.20	95.57	39.86	122.42	44.07	127.15
YNL125C	0.90	1.20	1.43	1.62	1.75	54.25	13.62	120.51	75.14	174.77	88.76	248.98
YNL127W	0.90	1.37	1.72	1.95	2.09	41.64	3.81	106.72	35.54	148.36	39.35	148.61
YNL127W	1.03	1.10	1.07	1.10	1.04	153.64	184.59	162.82	167.92	316.46	352.50	512.39
YNL128W	0.88	1.36	1.47	1.81	2.02	22.97	2.91	82.85	25.38	105.82	28.29	152.60
YNL129W	0.87	1.33	1.63	1.97	2.10	21.20	3.05	83.42	38.25	104.61	41.30	208.64
YNL133C	0.87	1.06	1.24	1.73	2.05	53.89	5.91	122.14	63.13	176.04	69.04	166.47
YNL134C	0.90	1.47	2.32	0.86	0.68	25.86	2.49	83.66	23.85	109.52	26.35	102.08
YNL134C	1.02	1.08	1.05	1.08	1.03	152.08	212.27	161.79	169.79	313.87	382.05	517.53
YNL135C	0.91	1.48	1.73	2.03	2.18	23.19	1.71	91.45	18.90	114.64	20.61	111.30
YNL135C	1.00	1.07	1.03	1.05	1.00	152.30	180.12	162.73	165.28	315.03	345.40	516.41
YNL136W	0.88	1.38	1.71	2.03	2.20	29.65	3.72	93.58	38.89	123.23	42.61	153.39
YNL139C	0.75	1.06	1.26	1.55	1.73	23.71	2.85	90.95	38.54	114.66	41.39	105.66

ORF	Optical density at 600 nm at time intervals (h)					GLUCOSE		FRUCTOSE		TOTAL Sugars(g/L)		TOTAL AMINO ACIDS (mg/L)
	0	20	27	42	67	43 h	67 h	43 h	67 h	43 h	67 h	48 h
YNL141W	0.91	1.53	1.77	2.10	2.20	20.66	1.91	86.52	17.69	107.18	19.60	107.94
YNL141W	0.95	1.01	0.99	1.01	0.96	162.47	172.33	163.81	157.79	326.28	330.12	522.99
YNL145W	0.90	1.31	1.43	1.70	1.80	29.32	1.82	99.16	3.47	128.48	5.28	405.30
YNL145W	0.95	1.01	0.99	1.01	0.96	156.44	199.70	167.44	174.94	323.88	374.64	512.25
YNL146C-A	0.87	1.14	1.62	1.86	2.01	16.14	1.71	79.41	23.59	95.55	25.30	86.92
YNL146W	0.87	1.12	1.58	1.88	1.85	19.12	1.45	84.73	19.53	103.84	20.98	100.81
YNL148C	0.90	1.25	1.72	2.03	2.18	30.98	4.54	98.92	43.55	129.89	48.09	143.05
YNL157W	0.91	1.59	1.83	2.22	2.22	18.01	1.67	76.23	14.93	94.24	16.60	124.72
YNL157W	0.97	1.00	0.98	1.00	0.94	151.37	196.88	169.46	169.66	320.84	366.54	516.32
YNL160W	0.88	1.41	1.72	1.88	1.99	21.12	2.21	74.14	21.41	95.26	23.61	145.11
YNL160W	1.01	1.05	1.03	1.07	1.01	148.43	161.14	169.41	150.87	317.83	312.02	515.12
YNL164C	0.88	1.16	1.62	1.85	2.00	16.82	1.94	70.31	26.65	87.13	28.59	94.11
YNL165W	0.82	0.95	1.39	1.73	1.91	32.01	4.72	101.59	46.66	133.60	51.38	118.07
YNL167C	0.92	1.61	1.94	2.19	2.33	23.51	4.43	79.27	32.58	102.78	37.01	142.13
YNL167C	1.04	1.09	1.07	1.11	1.05	161.44	183.06	167.68	165.57	329.12	348.62	515.04
YNL173C	0.91	1.49	1.86	2.19	2.35	23.74	2.42	81.89	20.80	105.62	23.22	108.82
YNL173C	1.05	1.10	1.08	1.12	1.06	149.83	194.14	159.21	167.07	309.04	361.21	516.93
YNL176C	0.76	1.02	1.51	1.78	1.91	13.47	1.22	77.50	11.47	90.97	12.69	85.56
YNL180C	0.89	1.58	1.95	2.09	2.23	80.86	50.83	153.32	125.36	234.18	176.19	209.72
YNL180C	0.93	0.98	0.95	0.98	0.92	144.17	176.05	167.65	155.85	311.82	331.89	520.40
YNL183C	0.91	1.50	1.71	1.98	2.13	24.53	2.16	97.97	23.25	122.50	25.40	104.52
YNL183C	0.94	0.99	0.96	0.99	0.93	151.81	198.52	150.28	166.89	302.10	365.41	521.77
YNL187W	0.86	1.43	1.87	2.16	2.30	23.24	2.36	81.06	28.52	104.30	30.88	104.61
YNL190W	0.89	1.47	1.67	1.96	2.14	20.16	1.61	87.77	15.85	107.92	17.46	123.35
YNL190W	0.97	1.02	0.99	1.02	0.96	156.00	185.20	161.59	163.54	317.59	348.74	519.76
YNL191W	0.81	1.20	1.50	1.78	1.92	25.33	3.43	87.93	41.85	113.26	45.28	107.17
YNL193W	0.79	1.23	1.54	1.85	1.97	23.17	2.83	86.64	37.01	109.81	39.85	134.88
YNL194C	0.87	1.52	1.70	2.04	2.18	19.58	1.78	81.73	19.39	101.30	21.17	108.41
YNL194C	1.03	1.10	1.07	1.09	1.03	148.69	177.92	162.17	151.04	310.86	328.95	519.87
YNL195C	0.85	1.29	1.60	1.94	2.12	21.32	2.42	84.12	32.84	105.45	35.25	103.60
YNL196C	0.72	1.07	1.34	1.64	1.77	24.96	2.72	90.66	36.15	115.62	38.87	105.04
YNL199C	0.88	1.24	1.36	1.89	1.92	31.06	3.27	101.11	35.75	132.17	39.02	121.34
YNL199C	0.97	1.03	1.00	1.02	0.97	161.94	161.45	165.25	154.57	327.19	316.03	514.90
YNL200C	0.81	1.22	1.55	1.82	2.07	18.86	2.82	81.16	37.16	100.03	39.98	91.51
YNL202W	0.81	1.17	1.63	1.85	2.04	17.86	2.11	83.64	26.47	101.50	28.58	91.01
YNL204C	0.88	1.48	1.77	2.12	2.17	17.45	1.80	69.29	20.08	86.74	21.88	105.69
YNL204C	0.98	1.04	1.01	1.02	0.97	147.23	199.11	162.70	161.40	309.93	360.51	518.11
YNL206C	0.79	1.15	1.61	1.86	1.95	18.96	1.97	85.73	25.49	104.69	27.46	94.43
YNL208W	0.74	0.98	1.39	1.57	1.68	20.10	2.36	86.76	33.18	106.86	35.55	105.25
YNL211C	0.70	1.05	1.51	1.73	1.85	21.31	2.59	85.91	32.87	107.22	35.45	105.61
YNL214W	0.69	1.25	1.58	1.72	1.88	21.88	2.83	86.96	37.24	108.84	40.07	92.25
YNL215W	0.65	0.98	1.24	1.49	1.63	37.15	4.23	113.37	43.29	150.51	47.52	77.21
YNL217W	0.64	1.06	1.35	1.62	1.74	23.79	3.21	88.53	43.90	112.32	47.11	116.25
YNL218W	0.69	1.14	1.48	1.81	1.98	22.78	3.05	87.81	38.22	110.58	41.27	104.59
YNL219C	0.89	1.51	1.85	2.15	2.19	18.97	1.97	72.55	16.16	91.52	18.13	128.14
YNL219C	1.01	1.08	1.05	1.07	1.01	160.53	184.58	157.49	165.03	318.02	349.61	517.10
YNL223W	0.89	1.60	1.90	2.16	2.23	16.59	1.72	69.75	29.56	86.34	31.27	66.74
YNL229C	0.95	1.62	1.91	2.18	2.29	17.03	1.76	69.79	28.58	86.82	30.34	161.51
YNL230C	0.97	1.68	1.97	2.23	2.34	18.71	1.23	73.49	25.03	92.21	26.26	250.13
YNL234W	0.93	1.56	1.92	2.21	2.26	18.09	2.21	64.84	17.78	82.93	19.99	172.30
YNL234W	0.90	0.97	0.94	0.95	0.91	149.86	192.03	176.23	166.48	326.09	358.51	508.23
YNL237W	1.00	1.71	1.99	2.23	2.34	18.42	1.93	70.72	32.06	89.14	33.99	177.05
YNL255C	1.01	1.78	1.99	2.25	2.26	9.23	0.26	69.80	3.88	79.03	4.14	96.94
YNL265C	1.08	1.81	2.07	2.33	2.37	15.22	0.38	70.42	13.61	85.64	13.99	151.11
YNL300W	1.00	1.74	1.64	1.98	2.11	22.38	1.79	85.30	25.18	107.68	26.97	121.76
YNL309W	1.00	1.55	1.79	2.17	2.22	20.18	1.12	80.84	19.65	101.02	20.77	144.99
YNL311C	0.94	1.45	1.59	1.89	2.01	18.89	1.59	78.82	24.26	97.71	25.85	148.32
YNL314W	1.02	1.45	1.51	1.82	1.95	21.13	1.47	83.83	22.86	104.96	24.33	199.55
YNL318C	1.01	1.72	1.96	2.23	2.27	15.35	0.24	68.31	11.73	83.66	11.97	321.92
YNR002C	0.98	1.68	1.99	2.31	2.34	19.70	1.91	81.58	26.33	101.28	28.23	137.32
YNR018W	1.01	1.52	1.87	2.06	2.20	18.11	1.19	78.94	21.96	97.05	23.15	120.66
YNR027W	0.99	1.53	1.81	2.20	2.26	23.08	2.07	82.34	25.68	105.42	27.75	170.27
YNR032C-A	0.94	1.30	1.53	1.90	1.99	21.78	2.01	82.86	19.43	104.65	21.45	83.90
YNR063W	0.92	1.32	1.59	2.00	2.10	27.92	2.17	104.92	24.17	132.84	26.35	85.31
YNR067C	0.99	1.69	1.67	2.00	2.09	15.63	0.44	81.43	17.56	97.06	18.00	101.79
YOL014W	1.07	1.81	2.04	2.37	2.33	14.71	0.71	73.08	17.51	87.80	18.22	143.03
YOL019W	0.97	1.84	1.77	2.08	2.19	18.76	1.00	79.41	21.93	98.17	22.92	140.43
YOL028C	0.94	1.41	1.66	2.06	2.11	18.56	1.07	81.43	20.69	99.99	21.76	146.74
YOL042W	1.00	1.80	2.11	2.06	2.16	10.83	1.39	51.44	20.80	62.27	22.19	215.98
YOL070C	1.00	1.61	1.84	2.22	2.30	21.69	2.30	82.02	28.97	103.70	31.27	124.79
YOL089C	0.99	1.56	1.81	2.20	2.27	21.70	1.54	87.84	24.26	109.54	25.81	171.05
YOL092W	0.98	1.50	1.83	2.22	2.28	21.13	1.97	82.81	26.10	103.93	28.07	123.90
YOL098C	1.02	2.05	1.82	1.95	2.08	9.51	-0.02	67.31	5.96	76.82	5.95	48.90
YOL100W	0.96	1.53	1.72	2.01	2.11	17.40	0.48	84.04	16.68	101.44	17.17	127.64
YOL108C	1.05	1.75	1.95	2.18	2.26	20.62	1.54	88.43	26.08	109.05	27.62	62.67
YOL110W	1.01	1.86	1.98	2.22	2.27	49.75	19.48	131.57	78.63	181.32	98.12	102.68
YOL117W	0.95	1.70	1.54	1.86	2.98	18.80	1.70	87.61	21.57	106.41	23.26	139.57
YOL129W	0.97	1.55	1.64	1.94	2.07	15.36	0.56	75.92	15.50	91.29	16.06	227.34
YOL132W	0.94	1.31	1.36	1.67	1.82	18.76	1.40	82.75	21.98	101.51	23.38	131.36
YOL158C	0.96	1.43	1.65	2.13	2.07	19.14	1.70	80.96	22.99	100.10	24.68	156.04
YOR002W	0.94	1.32	1.55	1.90	1.97	33.25	2.34	103.39	28.56	136.64	30.89	118.43
YOR052C	0.96	1.44	1.69	2.11	2.20	29.06	2.86	111.16	31.48	140.22	34.34	191.17
YOR054C	0.94	1.57	1.90	2.24	2.31	22.59	1.41	87.08	18.46	109.67	19.88	179.73
YOR061W	0.91	1.26	1.52	1.94	2.05	18.52	0.45	78.15	18.19	96.67	18.65	157.76
YOR062C	1.00	1.35	1.56	1.84	1.99	16.99	0.43	93.94	14.65	110.92	15.09	98.66
YOR092W	1.01	1.06	1.04	1.08	1.01	151.39	183.40	181.24	171.33	332.62	354.73	520.14
YOR099W	0.99	1.31	1.48	1.96	2.32	79.56	12.65	149.96	64.75	229.52	77.40	356.96
YOR101W	1.02	1.74	1.97	2.08	2.18	10.68	0.43	63.77	10.74	74.45	11.17	109.84
YOR108W	0.91	0.97	0.94	0.97	0.90	133.14	177.94	196.06	176.74	329.19	354.68	527.00
YOR113W	0.96	1.56	1.82	2.18	2.26	13.29	-0.07	70.36	1.54	83.65	1.47	180.14
YOR127W	1.00	1.65	1.69	1.91	2.12	17.54	1.20	75.66	19.95	93.21	21.15	146.55
YOR133W	1.00	1.60	1.88	2.24	2.29	21.05	1.98	85.32	24.41	106.37	26.38	125.68
YOR136W	0.99	1.34	1.65	1.61	1.78	60.16	7.14	141.55	46.97	201.71	54.11	525.11
YOR139C	0.96	1.34	1.51	1.87	1.95	27.81	1.87	105.21	26.53	133.02	28.40	124.77
YOR172W	0.95	1.03	0.99	1.01	0.96	151.39	201.83	176.96	187.71	328.35	389.54	525.93
YOR178C	0.92	1.34	1.54	1.89	1.99	26.74	1.22	111.30	18.78	138.04	20.00	119.56
YOR186W	0.93	1.78	2.02	2.12	2.28	10.38	0.98	57.86	14.26	68.23	15.25	188.08
YOR187W	0.97	1.50	1.78	2.12	2.28	28.81	4.84	85.23	52.68	114.04	57.51	112.12
YOR189W	1.01	1.83	1.84	2.15	2.21	24.34	3.49	73.62	36.73	97.96	40.22	184.40
YOR191W	1.00	1.58	1.95	2.16	2.35	24.15	1.87	80.10	28.09	104.25	29.96	125.01
YOR192C	0.95	1.39	1.87	2.18	2.31	21.66	2.17	65.63	33.47	87.28	35.65	170.19
YOR196C	1.00	1.50	1.95	2.26	2.36	32.65	2.17	98.94	31.66	131.58	33.83	208.74
YOR197W	0.97	1.35	1.82	2.18	2.28	13.39	6.72	40.04	58.35	53.44	65.07	49.21
YOR201C	0.98	1.39	1.88	2.24	2.39	33.16	2.68	107.27	42.34	140.43	45.02	255.89
YOR209C	1.00	1.54	1.83	2.13	2.32	24.94	6.45	80.78	58.70	105.72	65.15	214.45
YOR213C	1.02	1.58	1.73	2.02	2.13	14.41	0.73	87.78	14.85	102.19	15.58	92.84
YOR214C	0.99	1.51	1.82	2.08	2.17	11.77	0.35	76.16	9.12	87.93	9.47	204.14
YOR216C	0.99	1.42	1.61	1.93	2.11	26.05	1.15	99.88	24.14	125.93	25.28	176.94
YOR221C	0.92	1.49	1.72	2.09	2.27	38.31	4.84	96.62	30.25	134.93	35.09	140.12
YOR222W	0.95	1.09	1.06	0.90	0.99	156.92	150.02	170.23	156.40	327.15	306.43	523.11
YOR225W	1.02	1.87	2.08	2.31	2.31	9.04	0.06	64.06	8.91	73.11	8.97	128.50
YOR229W	0.95	1.36	1.53	1.85	1.98	15.56	0.58	85.53	17.37	101.09	17.94	111.30
YOR231W	0.98	1.77	1.75	2.04	2.14	20.46	0.92	94.08	21.68	114.54	22.59	151.57
YOR237W	1.00	1.76	2.04	2.29	2.36	18.01	2.10	69.71	22.87	87.72	24.98	204.34
YOR238W	1.05	1.89	2.15	2.32	2.43	18.91	3.30	66.05	41.07	84.95	44.38	226.38
YOR239W	1.02	1.77	2.03	2.26	2.37	21.04	2.13	76.51	29.84	97.55	31.97	204.17
YOR241W	0.97	1.74	2.03	2.20	2.33	18.53	2.36	71.36	29.04	89.89	31.40	235.51
YOR243C	1.05	1.84	2.12	2.26	2.40	21.57	4.11	77.34	43.12	98.91	47.22	288.72
YOR245C	1.04	1.69	2.10	2.26	2.40	21.12	1.78	73.80	19.30	94.92	21.09	215.58
YOR251C	1.01	1.59	2.02	2.29	2.36	23.42	2.10	74.20	26.96	97.62	29.07	291.08
YOR252W	1.03	1.88	2.17	2.32	2.39	15.52	1.09	66.13	5.45	81.64	6.54	231.81
YOR255W	1.01	1.53	1.97	2.30	2.38	24.28	2.89	78.97	37.04	103.25	39.93	243.62
YOR265W	1.04	1.47	1.84	2.10	2.17	54.51	24.37	129.45	113.27	183.95	137.63	205.85
YOR266W	0.95	1.40	1.68	1.88	2.09	30.38	7.67	90.93	59.79	121.30	67.46	120.42
YOR268C	0.94	1.61	1.88	2.03	2.19	16.83	2.25	69.23	23.51	86.06	25.75	165.13
YOR269W	0.97	1.53	1.77	2.00	2.24	38.95	4.41	102.52	44.96	141.47	49.37	307.17
YOR271C	1.01	1.79	2.05	2.28	2.40	22.92	2.06	77.34	23.54	100.26	25.60	203.19
YOR276W	0.97	1.67	1.97	2.15	2.28	19.81	2.43	69.73	27.74	89.54	30.17	203.83
YOR279C	0.98	1.60	1.88	2.09	2.25	17.81	2.12	72.13	24.75	89.93	26.86	184.04
YOR280C	0.99	1.34	1.52	1.89	2.00	21.93	0.99	94.23	18.98	116.16	19.97	191.17
YOR285W	0.99	1.49	1.87	2.08	2.26	13.63	1.84	50.53	19.51	64.16	21.34	204.15
YOR286W	1.04	1.59	1.98	2.19	2.36	22.39	2.17	80.30	24.14	102.69	26.31	217.23
YOR288C	0.99	1.51	1.97	2.22	2.32	28.41	2.57	89.94	31.74	118.35	34.32	304.23
YOR292C	0.94	1.28	1.72	2.10	2.17	30.52	3.45	93.12	36.98	123.64	40.44	238.65
YOR293C-A	0.97	1.41	1.99	2.24	2.33	38.96	4.68	111.43	45.85	150.39	50.53	257.47

	Optical density at 600 nm at time intervals (h)					GLUCOSE		FRUCTOSE		TOTAL Sugars(g/L)		TOTAL AMINO ACIDS (mg/L)
ORF	0	20	27	42	67	43 h	67 h	43 h	67 h	43 h	67 h	48 h
YOR293W	0.97	1.05	1.36	1.92	2.30	104.67	17.20	167.93	102.81	272.60	120.01	214.81
YOR295W	0.98	1.14	1.22	1.50	2.09	113.11	31.75	176.37	126.02	289.47	157.77	246.21
YOR298W	0.93	1.06	1.04	0.87	0.86	154.18	185.41	183.53	208.41	337.71	393.82	517.27
YOR300W	0.98	1.63	1.90	2.21	2.26	21.31	1.15	97.01	21.19	118.32	22.34	140.05
YOR304W	0.95	1.09	1.06	0.91	0.89	166.77	166.82	188.50	191.62	355.28	358.44	516.38
YOR307C	0.96	1.62	1.93	2.09	2.26	22.18	2.29	81.59	22.76	103.77	25.05	218.68
YOR311C	0.95	1.35	1.67	2.01	2.15	17.71	2.34	72.91	25.15	90.62	27.49	199.32
YOR322C	0.98	1.44	1.75	2.04	2.22	21.45	3.00	76.51	26.04	97.96	29.04	241.88
YOR323C	0.97	0.98	1.06	0.99	1.14	157.01	152.17	184.72	212.12	341.72	364.29	489.73
YOR332W	1.01	1.72	2.08	2.33	2.35	35.03	2.02	105.86	31.46	140.89	33.48	402.52
YOR334W	0.96	1.52	1.78	1.92	2.16	20.11	1.74	86.65	19.53	106.76	21.27	189.04
YOR337W	0.96	1.58	1.80	2.08	2.13	18.94	0.68	86.23	12.44	105.18	13.12	370.65
YOR339C	0.97	1.71	2.00	2.13	2.25	22.57	1.71	99.04	20.05	121.61	21.76	240.92
YOR342C	0.97	1.67	1.91	2.06	2.20	25.49	1.97	100.20	20.11	125.69	22.08	268.70
YOR344C	0.95	1.55	1.67	2.05	2.16	27.02	1.44	109.93	23.63	136.94	25.08	115.46
YOR346W	0.96	1.03	0.99	1.01	0.96	137.13	176.05	188.35	168.67	325.49	344.72	524.92
YOR347C	1.00	1.75	2.04	2.17	2.29	27.72	2.21	105.50	21.18	133.21	23.38	282.36
YOR349W	0.93	1.47	1.78	1.95	2.12	24.39	2.37	81.24	24.29	105.63	26.66	256.25
YOR355W	0.88	1.27	1.55	1.98	2.10	30.04	1.09	115.26	20.19	145.29	21.28	112.10
YOR356W	0.94	1.54	1.86	2.09	2.20	18.42	1.73	77.06	18.96	95.47	20.69	207.68
YOR358W	1.04	1.82	1.92	2.12	2.24	12.22	0.19	81.63	2.73	93.85	2.91	273.56
YOR363C	0.99	1.03	1.02	1.05	0.99	147.34	223.35	176.76	187.55	324.10	410.90	506.85
YOR365C	0.94	1.36	1.69	2.01	2.16	24.30	1.94	85.51	22.85	109.82	24.79	252.63
YOR368W	0.96	1.30	1.58	1.94	2.14	37.09	2.76	106.20	31.48	143.29	34.24	234.32
YOR375C	1.01	1.60	1.90	2.15	2.25	35.98	3.09	106.97	32.38	142.95	35.47	164.81
YOR377W	1.00	1.05	1.03	1.05	1.00	145.22	163.32	176.87	165.60	322.09	328.92	513.95
YOR380W	0.95	1.36	1.73	2.20	2.23	33.24	2.78	110.79	35.49	144.03	38.27	204.27
YOR381W	0.94	1.53	1.41	1.75	1.89	32.50	3.81	112.77	39.53	145.26	43.34	113.26
YOR382W	1.00	1.06	1.03	1.04	0.98	143.99	202.48	169.64	181.71	313.63	384.19	512.51
YOR383C	0.96	1.46	1.72	2.10	2.19	24.12	0.86	113.91	19.56	138.03	20.42	158.60
YOR385W	0.93	1.66	1.96	2.25	2.31	21.50	1.63	93.68	14.96	115.19	16.58	149.32
YOR386W	0.97	1.51	1.88	2.28	2.36	25.59	2.40	94.51	29.41	120.10	31.81	175.69
YPL001W	0.95	1.52	1.81	1.96	2.20	22.58	1.65	100.51	17.58	123.08	19.23	187.38
YPL002C	0.99	1.57	1.66	1.89	2.03	29.00	0.66	124.66	18.80	153.66	19.47	491.86
YPL004C	0.93	1.29	1.86	1.86	1.99	26.88	1.54	109.96	22.65	136.87	24.18	143.96
YPL008W	0.95	1.58	1.81	1.94	2.12	21.64	1.76	91.41	18.04	113.05	19.80	228.73
YPL014W	0.97	1.58	1.87	2.04	2.16	24.43	1.61	106.20	15.45	130.64	17.06	257.73
YPL015C	0.95	1.51	1.82	1.99	2.15	29.72	1.87	112.78	19.22	142.50	21.09	219.19
YPL017C	1.19	2.38	2.22	2.45	2.45	15.58	1.93	77.56	5.25	93.14	7.18	266.55
YPL021W	1.02	1.09	1.07	1.08	1.04	158.18	166.10	169.32	160.59	327.50	326.69	6.36
YPL022W	1.00	1.59	1.89	2.17	2.25	30.15	2.51	100.45	25.87	130.59	28.38	215.81
YPL027W	0.98	1.40	1.68	2.00	2.14	25.97	1.47	97.81	11.93	123.78	13.40	314.83
YPL030W	0.97	1.35	1.60	1.91	2.14	31.81	2.19	113.21	26.07	145.02	28.27	196.95
YPL034W	1.13	1.83	2.12	2.40	2.49	28.18	153.30	113.79	160.61	141.97	313.91	6.44
YPL036W	1.07	1.71	2.01	2.28	2.37	33.55	3.63	109.05	27.55	142.60	31.18	-4.20
YPL037C	1.01	1.46	1.78	2.13	2.27	36.76	2.36	113.37	24.17	150.13	26.53	289.91
YPL038W	1.14	1.24	1.24	1.27	1.20	164.20	5.15	175.32	36.46	339.52	41.61	-4.45
YPL039W	0.96	1.50	1.85	2.17	2.30	28.06	2.87	93.84	31.51	121.91	34.38	216.22
YPL040C	0.95	1.24	1.56	2.21	2.28	46.77	6.53	119.06	64.54	165.83	71.07	262.13
YPL041C	0.94	1.39	1.72	2.20	2.26	31.26	2.74	113.19	30.99	144.44	33.73	207.99
YPL046C	0.97	1.63	1.94	2.08	2.27	19.83	1.64	86.50	19.42	106.32	21.06	190.97
YPL047W	0.93	1.58	1.89	2.06	2.18	30.83	1.56	101.27	17.60	132.10	19.16	245.87
YPL051W	0.95	1.56	1.87	2.02	2.14	20.28	1.94	77.72	20.77	98.00	22.71	175.70
YPL057C	0.97	1.62	1.96	2.08	2.17	31.82	2.79	107.49	26.53	139.31	29.32	249.08
YPL068C	0.97	1.25	1.68	2.08	2.24	39.39	3.18	105.72	36.55	145.11	39.73	266.51
YPL070W	1.00	1.71	2.01	2.24	2.33	32.21	2.02	111.19	21.92	143.40	23.94	247.50
YPL071C	0.95	0.93	0.93	0.91	0.92	173.08	184.61	181.48	178.26	354.56	362.87	522.77
YPL084W	1.17	1.88	2.14	2.32	2.45	32.92	1.74	133.32	23.47	166.25	25.21	-4.39
YPL086C	0.99	1.39	1.70	2.08	2.24	45.47	4.01	124.84	40.90	170.31	44.92	275.73
YPL090C	1.18	1.48	1.75	2.28	2.51	79.73	1.53	141.29	20.72	221.02	22.25	-4.16
YPL091W	0.94	1.28	1.63	2.02	2.13	34.62	2.25	113.63	25.35	148.25	27.60	222.41
YPL095C	0.96	1.59	1.95	2.19	2.29	20.50	1.69	83.58	10.38	104.08	12.07	275.85
YPL096C-A	0.93	1.16	1.37	1.94	2.15	38.69	147.93	102.43	147.80	141.12	295.73	-4.54
YPL096W	0.93	1.36	1.68	2.11	2.19	29.63	2.38	97.14	27.05	126.78	29.43	299.78
YPL097W	0.94	1.41	1.72	2.19	2.27	22.67	2.88	87.14	32.90	109.81	35.77	197.57
YPL098C	0.95	2.22	1.59	1.76	1.94	20.94	2.54	93.34	20.17	114.28	22.71	251.85
YPL099C	0.97	1.54	1.84	1.98	2.11	21.18	1.86	84.91	22.15	106.09	24.01	213.49
YPL100W	0.97	1.66	1.96	2.08	2.20	25.77	1.79	108.64	18.81	134.40	20.60	198.77
YPL107W	0.96	1.46	1.79	1.98	2.12	33.99	2.47	123.99	27.05	157.99	29.52	225.83
YPL108W	0.95	1.40	1.75	2.07	2.17	34.70	2.48	118.08	27.05	152.77	29.53	210.56
YPL109C	1.07	1.67	2.00	2.27	2.36	28.59	1.91	94.43	20.48	123.02	22.39	149.42
YPL111W	1.01	1.54	1.85	2.14	2.25	36.26	2.46	118.52	29.90	154.78	32.36	198.62
YPL112C	1.01	1.43	1.69	2.05	2.22	36.26	2.47	115.12	27.54	151.38	30.01	234.47
YPL114W	1.08	1.75	2.09	2.41	2.48	30.06	173.92	92.76	164.96	122.82	338.88	-4.40
YPL115C	1.07	1.68	2.05	2.37	2.45	34.69	4.66	109.84	30.41	144.53	35.06	-4.18
YPL116W	1.13	1.72	2.07	2.39	2.48	46.05	2.10	130.95	20.81	177.00	22.91	-4.35
YPL119C	0.96	1.53	1.92	2.21	2.28	13.43	1.05	82.53	8.65	95.96	9.70	125.34
YPL120W	0.94	1.34	1.74	2.01	2.16	30.55	2.70	109.36	29.76	139.91	32.45	104.94
YPL121C	0.96	1.39	1.78	2.02	2.12	17.32	1.17	89.27	11.41	106.80	12.58	113.24
YPL127C	0.95	1.52	1.83	2.09	2.19	17.86	1.66	86.38	15.27	104.23	16.93	134.21
YPL129W	1.06	1.43	1.66	2.06	2.18	37.70	4.06	117.98	35.42	155.68	39.47	-4.23
YPL130W	1.02	1.47	1.70	2.12	2.24	40.20	0.78	114.41	16.43	154.61	17.21	-4.44
YPL135W	1.13	1.95	2.24	2.46	2.51	18.89	10.12	81.22	50.94	100.12	61.06	22.70
YPL137C	0.93	1.37	1.59	1.90	2.00	18.98	1.45	88.61	12.57	107.59	14.02	99.66
YPL138C	0.90	1.49	1.63	1.90	2.12	25.20	1.51	103.28	14.09	128.48	15.60	51.36
YPL140C	0.97	1.66	1.98	2.30	2.34	18.86	2.04	85.21	25.81	104.07	27.85	23.86
YPL141C	1.08	1.70	2.05	2.37	2.47	24.73	10.87	94.43	53.41	119.16	64.29	-3.37
YPL144W	0.92	1.36	1.68	1.95	2.14	36.73	2.52	111.19	28.86	147.92	31.38	119.84
YPL145C	0.94	1.23	1.52	1.66	1.80	34.20	2.40	110.83	24.06	145.03	26.45	126.01
YPL147W	0.93	1.22	1.72	1.97	2.13	31.43	2.02	105.80	20.43	137.23	22.45	62.72
YPL148C	0.92	1.18	1.64	1.97	2.13	26.33	1.49	103.08	13.31	129.42	14.80	79.93
YPL150W	1.01	1.67	2.04	2.34	2.43	26.92	1.91	102.19	21.73	129.12	23.64	-3.27
YPL154C	1.07	1.58	1.84	2.25	2.34	41.31	2.46	119.50	19.20	160.81	21.66	-3.53
YPL156C	0.91	1.10	1.49	1.78	2.00	44.28	5.70	119.38	39.17	163.66	44.87	147.93
YPL158C	1.11	1.59	1.86	2.26	2.37	36.58	2.41	102.46	25.13	139.04	27.54	-3.17
YPL162C	0.90	1.16	1.60	1.85	2.14	37.88	2.59	118.22	27.37	156.10	29.96	105.73
YPL164C	1.01	1.53	1.95	2.19	2.25	17.90	1.26	89.19	11.38	107.09	12.64	117.02
YPL166W	0.95	1.46	1.93	2.17	2.27	13.08	1.95	64.92	19.04	78.00	20.99	120.91
YPL168W	1.01	1.60	2.04	2.29	2.35	23.33	2.20	93.64	20.34	116.98	22.54	129.65
YPL170W	1.00	1.50	1.86	2.14	2.25	21.02	1.62	85.69	15.85	106.71	17.47	146.43
YPL171C	0.97	1.66	1.94	2.19	2.24	15.58	1.48	80.34	13.29	95.92	14.77	108.49
YPL174C	0.93	1.47	1.71	1.96	2.17	66.15	16.60	133.74	70.36	199.89	86.96	272.24
YPL176C	0.99	1.51	1.59	1.95	2.12	35.26	1.76	114.85	22.27	150.10	24.03	-3.17
YPL177C	1.05	1.55	1.81	2.24	2.34	26.65	5.15	82.57	34.03	109.23	39.19	-3.20
YPL179W	1.06	1.52	1.71	2.09	2.22	24.54	1.77	82.13	21.95	106.67	23.71	-3.60
YPL181W	1.07	1.55	1.86	2.27	2.34	54.44	1.83	126.35	21.30	180.79	23.13	-3.72
YPL184C	0.95	1.40	1.60	1.89	2.02	57.69	7.66	134.46	53.48	192.15	61.15	143.60
YPL186C	0.93	1.36	1.75	1.95	2.21	26.87	1.78	96.64	16.97	123.52	18.75	165.91
YPL187W	0.98	1.35	1.73	2.21	2.31	43.25	1.20	111.51	17.94	154.76	19.14	-3.61
YPL189C-A	0.95	1.31	1.80	2.00	2.26	20.63	2.22	74.52	20.51	95.15	22.73	102.62
YPL191C	0.95	1.31	1.74	1.93	2.18	23.73	1.54	88.51	13.08	112.24	14.63	126.97
YPL192C	0.92	1.28	1.75	1.96	2.26	34.22	2.17	110.79	22.44	145.01	24.62	116.76
YPL194W	0.89	1.08	1.42	1.58	2.05	48.58	4.40	125.28	37.73	173.86	42.13	257.65
YPL198W	1.05	1.73	2.13	2.31	2.39	10.18	1.50	66.65	13.00	76.83	14.50	110.28
YPL199C	1.01	1.61	2.02	2.18	2.26	15.01	1.48	65.75	14.24	80.76	15.71	108.91
YPL201C	1.04	1.69	2.11	2.33	2.38	13.54	1.90	65.18	16.57	78.72	18.47	116.40
YPL202C	0.95	1.32	1.75	1.98	2.04	20.18	1.53	91.61	11.96	111.79	13.49	154.75
YPL203W	0.92	1.38	1.61	1.90	1.97	9.93	1.92	58.42	4.44	68.35	6.37	180.04
YPL206C	0.98	1.62	1.92	2.20	2.27	25.05	1.59	92.21	16.57	117.27	18.16	178.30
YPL208W	0.96	1.50	1.78	1.97	2.20	13.73	1.52	64.06	13.83	77.79	15.35	165.05
YPL212C	1.00	1.65	1.92	2.09	2.24	26.51	2.21	94.89	19.07	121.40	21.28	157.05
YPL220W	1.02	1.46	1.71	2.18	2.34	41.98	0.33	115.67	16.86	157.65	17.19	-3.77
YPL221W	1.17	1.97	2.26	2.49	2.53	21.48	2.56	94.67	24.48	116.14	27.04	47.42
YPL222W	0.97	1.43	1.90	2.08	2.32	30.23	2.41	94.95	25.03	125.18	27.44	154.36
YPL223C	0.94	1.26	1.68	1.84	1.98	34.27	3.38	111.47	33.85	145.74	37.23	143.29
YPL224C	1.00	1.61	1.99	2.33	2.38	30.98	2.37	106.94	25.43	137.91	27.81	49.19
YPL229W	0.92	1.18	1.48	1.75	2.13	22.68	2.80	81.93	26.88	104.61	29.68	130.12
YPL232W	1.07	1.74	2.04	2.37	2.42	29.17	1.49	103.04	22.05	132.21	23.55	-3.77
YPL236C	1.02	1.61	1.96	2.31	2.37	20.28	1.59	90.42	22.95	110.70	24.54	-3.84
YPL239W	0.92	1.25	1.53	1.79	2.12	39.67	3.13	119.36	35.08	159.04	38.22	217.32
YPL240C	1.05	1.79	2.18	2.36	2.41	11.46	1.43	70.54	16.02	82.00	17.45	102.77
YPL244C	0.96	1.79	1.67	1.93	2.11	19.53	1.50	91.05	14.58	110.57	16.08	169.00
YPL245W	1.03	1.62	2.03	2.28	2.36	17.99	1.74	77.02	19.36	95.01	21.10	125.08
YPL246C	1.07	1.63	1.93	2.34	2.45	21.20	2.41	80.81	21.10	102.02	23.51	-3.75
YPL247C	0.97	1.60	2.00	2.26	2.35	14.46	1.38	75.15	10.43	89.60	11.81	116.73

ORF	Optical density at 600 nm at time intervals (h)					GLUCOSE		FRUCTOSE		TOTAL Sugars(g/L)		TOTAL AMINO ACIDS (mg/L)
	0	20	27	42	67	43 h	67 h	43 h	67 h	43 h	67 h	48 h
YPL248C	1.11	1.90	2.21	2.43	2.52	19.13	2.29	81.14	22.75	100.27	25.04	-3.70
YPL249C	0.93	1.44	1.73	1.93	2.20	19.62	1.84	74.10	14.06	93.72	15.91	137.10
YPL257W	0.95	1.50	1.82	1.92	2.22	19.56	2.30	72.29	22.90	91.85	25.20	118.29
YPL258C	0.95	1.33	1.81	1.97	2.25	32.64	2.39	105.20	23.13	137.83	25.52	127.94
YPL259C	0.96	1.37	1.80	2.00	2.29	27.26	1.76	103.18	15.39	130.45	17.14	154.60
YPL260W	0.94	1.35	1.73	2.01	2.07	13.18	1.64	69.87	17.69	83.05	19.33	102.41
YPL263C	0.91	1.33	1.82	2.13	2.18	17.75	1.49	83.66	14.84	101.41	16.33	139.68
YPL264C	0.97	1.50	1.96	2.24	2.30	23.47	1.86	93.30	20.77	116.77	22.63	130.98
YPL265W	1.13	1.76	1.97	2.30	2.40	27.44	6.41	92.35	42.13	119.79	48.54	-3.51
YPL267W	0.91	1.48	1.80	2.12	2.18	20.40	1.59	85.95	19.25	106.36	20.84	129.38
YPL268W	0.91	1.50	1.82	2.13	2.18	22.72	1.49	86.98	16.31	109.70	17.80	147.62
YPL269W	1.07	1.63	1.91	2.28	2.38	24.79	1.72	87.58	22.38	112.36	24.09	-3.72
YPL271W	0.91	1.22	1.25	1.29	1.52	142.35	80.16	172.00	113.41	314.35	193.57	411.87
YPL271W	0.91	1.08	1.07	1.01	0.98	191.71	167.25	199.69	175.78	391.40	343.03	524.42
YPL274W	1.08	1.71	2.01	2.35	2.42	29.41	1.52	107.26	18.05	136.67	19.57	-3.60
YPR002W	1.00	1.44	1.69	2.07	2.17	28.16	1.26	98.59	20.46	126.75	21.71	-3.68
YPR003C	0.94	1.47	1.76	1.95	2.23	24.82	2.79	92.11	22.56	116.94	25.35	159.89
YPR006C	0.93	1.41	1.75	1.88	2.18	26.36	2.89	90.06	22.76	116.42	25.65	169.95
YPR007C	0.92	1.34	1.87	1.94	2.30	25.97	2.41	90.40	26.59	116.37	29.00	208.98
YPR008W	1.10	1.72	2.02	2.31	2.41	37.42	0.79	120.03	15.39	157.45	16.18	-3.73
YPR009W	0.98	1.41	1.72	2.17	2.28	37.90	0.71	127.67	15.82	165.57	16.54	-3.97
YPR011C	0.93	1.20	1.58	1.78	2.14	30.25	2.31	107.79	25.38	138.04	27.69	151.26
YPR013C	1.00	1.61	1.94	2.27	2.32	38.87	1.99	130.69	26.87	169.56	28.86	102.86
YPR015C	0.94	1.78	2.01	2.26	2.29	9.74	2.06	59.06	23.56	68.80	25.62	102.19
YPR018W	0.90	1.15	1.40	1.70	1.99	28.44	2.23	97.08	20.97	125.52	23.20	144.76
YPR022C	1.04	1.77	2.07	2.37	2.40	23.74	1.78	95.05	22.75	118.78	24.53	-3.10
YPR023C	0.88	1.20	1.49	1.80	2.08	25.47	1.62	102.50	13.60	127.97	15.22	170.10
YPR024W	0.88	1.39	1.63	1.90	2.08	60.95	17.69	123.05	63.88	184.00	81.57	211.05
YPR024W	1.02	1.04	1.16	1.14	1.10	158.23	174.30	174.07	185.92	332.30	360.21	514.50
YPR026W	0.95	1.08	1.38	1.60	1.73	87.97	24.35	163.48	102.35	251.46	126.70	523.23
YPR027C	1.04	1.82	2.14	2.36	2.41	16.87	1.35	85.55	14.26	102.42	15.62	51.44
YPR031W	0.95	1.30	1.32	1.17	1.21	178.04	134.55	178.40	157.50	356.44	292.05	508.76
YPR031W	0.99	1.14	1.15	1.10	1.04	162.45	216.15	182.44	194.84	344.89	410.99	520.98
YPR036W	0.96	1.14	1.11	1.05	1.01	164.59	143.27	160.16	137.28	324.76	280.55	518.75
YPR036W	0.94	1.12	1.10	1.06	1.01	176.25	202.22	195.32	193.29	371.58	395.51	518.39
YPR040W	1.06	1.75	2.06	2.36	2.40	19.78	2.70	92.56	27.05	112.34	29.75	-3.01
YPR042C	0.93	1.68	1.96	2.23	2.29	21.39	2.79	69.95	23.16	91.34	25.95	83.59
YPR042C	0.99	1.63	1.83	2.06	2.11	28.78	3.15	104.99	32.75	133.78	35.90	186.00
YPR043W	1.00	1.72	2.04	2.23	2.41	24.08	1.90	92.88	22.85	116.96	24.75	152.19
YPR046W	0.96	1.53	1.82	1.97	2.24	28.93	2.22	100.91	14.61	129.84	16.83	252.08
YPR047W	0.96	1.56	1.93	1.96	2.08	28.88	2.52	102.74	22.76	131.61	25.28	128.49
YPR049C	0.96	0.95	1.09	0.91	1.05	155.19	192.45	168.72	195.42	323.91	387.88	524.76
YPR052C	0.88	1.13	1.55	1.75	1.88	33.68	2.51	110.37	30.36	144.05	32.87	107.76
YPR054W	1.07	1.64	1.92	2.28	2.36	26.57	2.07	99.76	24.32	126.33	26.39	-3.11
YPR057W	0.86	1.10	1.35	1.69	1.99	35.42	3.69	119.04	35.20	154.47	38.89	110.28
YPR058W	0.98	1.75	2.13	2.30	2.32	7.35	1.19	62.08	3.47	69.43	4.66	100.40
YPR061C	1.00	1.74	2.02	2.25	2.32	11.96	1.61	72.31	6.43	84.27	8.04	212.13
YPR062W	0.97	1.64	2.13	2.23	2.29	17.61	1.91	89.38	14.98	106.99	16.90	155.15
YPR063C	0.98	1.92	2.16	2.34	2.36	10.59	1.49	69.63	2.20	80.22	3.69	161.27
YPR065W	0.95	1.61	1.91	2.21	2.26	23.91	1.59	98.25	16.40	122.16	17.98	145.47
YPR066W	0.99	1.14	1.12	1.05	1.06	160.64	190.58	183.93	188.13	344.57	378.71	519.23
YPR067W	0.95	1.48	1.76	2.03	2.20	32.85	2.32	106.40	23.57	139.25	25.89	148.39
YPR069C	1.06	1.90	2.15	2.37	2.42	12.43	1.82	74.72	23.04	87.15	24.86	-2.74
YPR070W	0.97	1.56	1.85	2.05	2.29	26.79	1.91	102.94	17.06	129.73	18.97	210.37
YPR071W	0.96	1.70	2.01	2.07	2.31	17.55	1.56	86.68	6.95	104.22	8.51	190.19
YPR074C	0.94	1.03	1.02	0.96	1.27	153.12	173.64	169.70	189.80	322.82	363.44	515.09
YPR079W	0.92	1.43	1.72	2.14	2.23	20.82	1.69	95.52	23.87	116.34	25.56	-2.96
YPR084W	0.92	1.30	2.00	1.86	2.01	28.41	2.48	102.82	25.01	131.23	27.49	139.50
YPR098C	1.02	1.60	1.98	2.31	2.40	35.66	4.61	117.01	38.78	152.67	43.38	-3.15
YPR100W	0.88	1.22	1.42	1.78	2.08	41.18	4.21	127.98	37.73	169.16	41.94	94.61
YPR106W	1.00	1.74	1.99	2.27	2.35	18.26	158.34	86.79	155.08	105.05	313.41	148.39
YPR114W	0.96	1.57	2.18	2.23	2.30	18.19	1.76	87.70	22.10	105.89	23.86	196.80
YPR117W	1.04	1.78	2.08	2.31	2.38	13.88	1.29	80.98	12.05	94.86	13.34	124.84
YPR119W	1.03	1.18	1.18	1.14	1.08	159.83	176.23	191.90	193.61	351.73	369.84	509.12
YPR120C	1.04	1.69	1.97	2.30	2.38	20.90	159.56	87.93	174.64	108.83	334.19	148.51
YPR121W	1.01	1.79	2.08	2.33	2.37	21.38	1.84	98.86	19.36	120.24	21.20	162.09
YPR124W	1.10	1.80	2.09	2.32	2.37	38.82	2.55	119.77	26.87	158.58	29.42	-3.18
YPR125W	0.99	1.58	1.85	2.13	2.31	28.54	2.12	110.85	25.03	139.40	27.15	151.09
YPR127W	0.94	1.33	1.52	1.61	1.92	25.79	1.85	103.20	19.99	129.00	21.84	173.06
YPR128C	1.04	1.69	2.00	2.34	2.39	24.34	0.53	102.93	16.40	127.26	16.92	-3.39
YPR129W	0.97	1.41	1.68	1.87	2.14	40.02	3.32	130.09	36.44	170.12	39.75	194.10
YPR132W	0.96	1.24	1.41	1.82	2.22	67.06	3.73	156.30	38.71	223.36	42.45	206.94
YPR133W-A	0.95	1.46	1.85	1.94	2.16	22.17	2.81	98.65	0.73	120.83	3.54	45.08
YPR134W	1.03	1.65	2.04	2.21	2.38	23.02	1.35	107.77	14.29	130.80	15.64	-13.58
YPR135W	1.01	1.39	1.79	2.03	2.31	53.08	2.49	139.49	25.55	192.57	28.05	360.40
YPR138C	1.17	1.86	2.21	2.39	2.52	21.00	1.59	97.69	12.59	118.69	14.19	70.04
YPR145W	1.03	1.78	2.55	2.47	2.39	22.37	1.12	100.95	12.82	123.32	13.94	80.67
YPR147C	1.03	1.68	2.10	2.32	2.40	16.84	1.36	66.43	13.69	83.27	15.05	52.92
YPR148C	1.04	1.59	2.05	2.28	2.37	19.32	1.63	92.62	10.46	111.94	12.09	119.72
YPR149W	1.10	1.80	2.07	2.40	2.47	25.90	0.45	98.39	3.86	124.29	4.31	-3.34
YPR152C	1.05	1.87	2.21	2.38	2.46	19.09	1.33	91.23	10.55	110.32	11.88	73.57
YPR154W	1.02	1.58	1.87	2.25	2.34	23.02	1.52	85.35	21.48	108.38	22.99	-3.08
YPR155C	0.98	1.12	1.23	1.48	1.95	95.59	7.94	160.77	48.27	256.36	56.21	244.67
YPR156C	0.97	1.48	1.84	2.20	2.28	22.35	156.61	86.23	158.06	108.59	314.67	-3.03
YPR159C-A	0.98	1.55	1.87	2.21	2.30	30.59	1.84	116.59	18.67	147.18	20.51	58.01
YPR160W	1.13	1.85	2.13	2.29	2.46	23.51	1.87	99.80	16.31	123.31	18.18	51.60
YPR164W	1.12	1.54	1.70	1.86	2.16	46.55	2.34	124.50	25.55	171.05	27.90	413.83
YPR167C	1.01	1.56	1.92	2.09	2.29	20.19	1.71	91.85	13.57	112.04	15.28	61.45
YPR171W	1.09	1.74	2.00	2.31	2.40	25.68	155.17	91.48	147.69	117.16	302.86	-3.46
YPR172W	0.94	1.61	1.97	2.31	2.41	28.14	0.85	94.90	14.42	123.05	15.27	-4.52
YPR173C	1.00	1.41	1.74	1.89	2.01	51.25	6.85	133.37	55.64	184.62	62.49	257.78
YPR174C	1.04	1.31	1.57	1.76	1.93	100.27	26.15	165.11	75.02	265.38	101.18	316.79
YPR179C	0.99	1.51	1.88	2.19	2.27	15.60	1.78	70.48	13.89	86.07	15.67	86.87
YPR185W	0.98	1.52	1.93	2.24	2.31	24.26	2.12	93.50	18.76	117.76	20.87	44.33
YPR188C	1.12	1.71	2.03	2.37	2.46	30.88	2.54	111.27	21.82	142.15	24.36	-3.25
YPR189W	0.99	1.47	1.89	2.18	2.25	24.92	1.94	101.11	15.68	126.03	17.62	96.15
YPR191W	1.09	1.92	2.25	2.39	2.45	17.83	1.98	89.31	14.93	107.15	16.91	161.13
YPR192W	0.98	1.51	1.89	2.02	2.21	25.20	1.89	103.22	13.83	128.43	15.72	133.40

Appendix 3. Micro-fermentation data of WYDL_LN (all candidates).

ORF name	OD at 600 nm at sampling time points (hours)							GLUCOSE		FRUCTOSE		TOTAL SUGARS	
	0 h	20 h	27 h	44 h	66 h	93 h	113 h	120 h	146 h	120 h	146 h	120 h	146 h
YNL145W	0.87	1.15	1.25	1.29	1.42	1.66	1.64	-0.51	0.06	8.29	-0.33	7.79	-0.27
YDR368W	0.90	1.30	1.48	1.54	1.70	1.90	1.88	3.32	0.52	26.28	-0.63	29.60	-0.11
YKL037W	0.86	1.12	1.24	1.31	1.45	1.78	1.69	0.38	0.76	9.47	0.00	9.85	0.77
YDR358W	0.95	1.32	1.43	1.55	1.68	1.87	1.85	9.13	1.04	43.21	-0.17	52.33	0.88
YER118C	0.95	1.47	1.60	1.67	1.81	1.99	1.98	12.55	1.58	40.32	-0.42	52.87	1.16
YER155C	0.90	1.35	1.50	1.59	1.76	1.93	1.93	11.61	1.64	82.99	-0.42	94.60	1.22
YDR486C	0.87	1.19	1.32	1.37	1.51	1.70	1.66	9.61	1.52	31.97	-0.25	41.58	1.27
YER156C	0.90	1.41	1.59	1.74	1.87	2.04	2.04	10.83	1.67	77.80	-0.38	88.63	1.29
YDR379W	0.90	1.31	1.47	1.54	1.69	1.89	1.86	11.91	1.26	33.59	0.07	45.50	1.32
YER129W	0.91	1.35	1.49	1.57	1.72	1.89	1.85	13.44	1.65	69.55	-0.27	82.99	1.37
YDR359C	0.94	1.17	1.32	1.43	1.56	1.73	1.70	12.28	1.57	56.78	-0.08	69.06	1.49
YDR363W-A	0.91	1.35	1.58	1.58	1.73	1.91	1.89	14.71	2.09	63.21	-0.21	77.92	1.88
YER184C	0.98	1.55	1.69	1.77	1.91	2.07	2.05	17.72	2.34	91.27	-0.29	108.99	2.05
YER167W	1.00	1.47	1.63	1.76	1.88	2.05	2.04	17.00	2.30	93.60	-0.23	110.60	2.08
YDR383C	0.90	1.34	1.50	1.61	1.75	1.95	1.92	15.63	2.47	30.74	-0.14	46.37	2.32
YEL027W	0.92	1.34	1.47	1.56	1.70	1.87	1.84	16.69	2.54	39.38	0.13	56.08	2.67
YDR370C	0.90	1.39	1.58	1.66	1.80	1.98	1.97	16.70	2.35	43.32	0.53	60.02	2.88
YFL011W	0.95	1.41	1.57	1.69	1.82	1.99	1.99	15.31	3.44	83.32	-0.23	98.63	3.21
YFL019C	0.93	1.38	1.53	1.63	1.76	1.94	1.91	16.83	3.74	85.00	-0.21	101.83	3.53
YGR296W	0.87	1.26	1.42	1.49	1.58	1.88	1.82	0.99	0.14	21.95	3.61	22.94	3.74
YNL176C	0.80	1.16	1.22	1.29	1.39	1.71	1.64	1.60	0.36	16.45	3.68	18.05	4.04
YIL156W	0.91	1.25	1.37	1.44	1.54	1.90	1.79	0.73	0.41	16.00	3.77	16.73	4.18
YER083C	0.92	1.21	1.38	1.56	1.68	1.86	1.84	21.10	4.18	19.67	0.11	40.77	4.29
YAL044W-A	0.90	1.48	1.60	1.64	1.85	2.02	2.00	2.51	0.49	30.77	4.24	33.27	4.73
YER072W	0.96	1.49	1.65	1.75	1.90	2.06	2.05	16.69	4.12	24.43	0.66	41.12	4.78
YOR113W	0.95	1.38	1.51	1.52	1.64	1.92	1.83	2.04	0.43	29.01	5.17	31.04	5.59
YGL087C	0.87	1.27	1.41	1.45	1.59	1.89	1.81	1.16	0.83	23.12	5.27	24.28	6.10
YMR171C	1.02	1.50	1.64	1.75	1.82	1.93	2.08	2.57	0.20	24.62	5.91	27.19	6.11
YDR386W	0.96	1.40	1.55	1.68	1.82	1.98	1.97	19.46	5.99	29.03	0.40	48.49	6.40
YPL084W	0.94	1.39	1.56	1.57	1.66	1.92	1.89	0.33	-0.07	27.70	6.47	28.03	6.40
YNL318C	0.98	1.56	1.71	1.73	1.84	2.09	2.03	4.34	0.26	46.64	6.53	50.98	6.79
YLR027C	0.90	1.36	1.54	1.58	1.74	1.98	1.92	1.83	0.50	34.90	6.32	36.73	6.82
YPL096C-A	1.14	1.54	1.81	1.95	2.12	2.30	2.36	2.06	-0.04	29.98	7.46	32.04	7.42
YGR040W	0.93	1.41	1.55	1.57	1.70	2.00	1.93	2.58	0.52	32.62	7.46	35.19	7.98
YMR029C	0.94	1.58	1.75	1.79	1.87	2.13	2.06	2.90	0.12	45.00	7.88	47.90	8.01
YLL039C	0.87	1.15	1.30	1.28	1.33	1.65	1.47	1.00	0.31	36.67	7.76	37.67	8.07
YBR299W	0.86	1.33	1.62	1.57	1.69	2.00	2.02	1.46	0.12	28.01	7.99	29.47	8.11
YLR413W	0.91	1.33	1.51	1.60	1.77	2.01	1.96	1.37	0.61	29.59	8.73	30.96	9.34
YIL055C	0.90	1.40	1.52	1.57	1.67	1.95	1.87	3.49	0.68	36.77	8.83	40.26	9.51
YJR044C	0.95	1.47	1.60	1.63	1.74	2.00	1.96	3.45	0.59	34.10	9.17	37.55	9.75
YJL020C	0.89	1.36	1.53	1.57	1.67	2.09	1.88	2.78	0.25	42.95	10.14	45.73	10.39
YPR061C	0.96	1.58	1.62	1.78	1.87	2.11	2.08	6.43	-0.01	43.43	10.77	49.86	10.76
YEL012W	0.93	1.38	1.51	1.58	1.72	1.90	1.89	10.03	1.07	38.23	10.05	48.27	11.13
YLR095C	1.01	1.51	1.66	1.76	1.85	2.11	2.12	3.36	0.39	31.74	10.83	35.10	11.22
YPL203W	0.89	1.39	1.40	1.54	1.68	1.78	1.82	2.68	0.49	31.08	10.80	33.76	11.28
YGR206W	1.07	1.66	1.80	1.85	1.96	2.19	2.18	2.93	0.63	35.44	11.00	38.38	11.63
YDR320C	0.91	1.37	1.49	1.64	1.74	2.00	2.01	2.78	0.37	40.32	11.61	43.10	11.98
YKL213C	0.93	1.43	1.55	1.59	1.71	2.00	1.92	4.97	0.39	39.48	11.71	44.45	12.10
YIL035C	0.94	1.46	1.63	1.65	1.75	1.91	1.96	1.83	0.28	38.93	12.01	40.76	12.29
YNL084C	0.96	1.16	1.33	1.33	1.36	1.61	1.51	5.60	0.50	46.83	11.97	52.43	12.47
YNL215C	0.88	1.28	1.42	1.52	1.67	1.89	1.85	6.91	0.59	40.89	12.00	47.80	12.58
YGR112W	0.94	1.33	1.46	1.48	1.65	1.92	1.83	3.70	0.59	35.66	12.22	39.36	12.82
YLR417W	0.87	1.16	1.28	1.29	1.39	1.60	1.55	2.85	0.59	53.23	12.27	56.08	12.85
YGL019W	0.88	1.27	1.43	1.47	1.59	1.83	1.79	3.70	0.42	45.33	12.60	49.03	13.03
YNL127W	0.86	1.11	1.27	1.28	1.41	1.70	1.67	7.11	0.19	48.79	12.94	55.90	13.12
YGR080W	1.20	1.78	1.91	1.98	2.06	2.28	2.27	4.39	0.55	44.45	12.65	48.85	13.19
YMR254C	0.94	1.34	1.47	1.53	1.62	1.91	1.84	3.62	0.38	40.59	12.83	44.21	13.22
YPR058W	0.93	1.57	1.69	1.74	1.83	2.09	2.04	7.59	0.05	48.07	13.26	55.65	13.31
YMR030W	0.94	1.44	1.61	1.66	1.78	2.06	1.96	3.95	0.48	41.84	12.86	45.79	13.33
YKL062W	1.02	1.56	1.73	1.78	1.89	2.11	2.06	3.91	0.44	39.15	12.92	43.06	13.36
YGR132C	0.99	1.66	1.80	1.83	1.91	2.15	2.10	4.21	0.52	43.26	13.19	47.47	13.72
YIL015W	0.85	1.16	1.25	1.26	1.37	1.70	1.57	4.10	0.72	42.09	13.00	46.20	13.72
YIL085C	0.90	1.19	1.34	1.49	1.59	1.91	1.79	3.98	0.21	46.22	13.55	50.20	13.76
YNL085W	0.84	1.21	1.32	1.37	1.49	1.84	1.76	2.78	0.88	24.54	13.00	27.32	13.87
YER145C	0.95	1.20	1.34	1.46	1.59	1.76	1.73	14.11	1.79	76.01	12.58	90.12	14.38
YPL027W	0.94	1.38	1.52	1.70	1.80	1.96	1.96	4.46	0.61	31.29	13.79	35.75	14.39
YAL059W	0.92	1.32	1.45	1.78	1.87	1.96	1.97	3.85	0.12	49.17	14.31	53.02	14.44
YLR238W	0.95	1.44	1.59	1.65	1.73	2.02	1.96	6.99	0.42	42.21	14.02	49.20	14.44
YKR066C	0.94	1.43	1.60	1.69	1.81	2.02	2.04	5.53	1.16	38.08	13.49	43.61	14.66
YJL062W	0.92	1.32	1.57	1.64	1.77	2.06	1.99	5.81	0.59	50.30	14.12	56.11	14.71
YDR377W	0.86	1.11	1.30	1.42	1.54	1.81	1.80	6.17	0.23	46.45	14.52	52.62	14.75
YOL129W	0.97	1.44	1.58	1.59	1.68	1.92	1.85	4.90	0.59	52.04	14.29	56.94	14.88
YNL078W	0.91	1.42	1.60	1.63	1.71	1.98	1.92	6.48	0.25	58.65	14.67	65.13	14.92
YKL003C	0.90	1.36	1.49	1.59	1.74	2.00	1.99	3.47	1.48	36.01	13.49	39.48	14.96
YGL082W	0.91	1.43	1.56	1.60	1.72	1.99	1.92	6.23	0.87	45.51	14.14	51.74	15.01
YDR255C	0.90	1.42	1.55	1.68	1.78	2.03	2.06	4.46	0.52	44.38	14.65	48.84	15.16
YKR088C	0.95	1.37	1.55	1.61	1.71	2.04	2.02	3.76	0.51	30.67	15.02	34.42	15.52
YER174C	0.94	1.49	1.65	1.71	1.83	2.10	2.04	6.11	0.48	60.42	15.07	66.53	15.55
YPR071W	0.89	1.37	1.43	1.59	1.67	1.77	1.89	3.46	0.39	43.74	15.16	47.19	15.56
YGR070W	0.94	1.57	1.75	1.78	1.88	2.14	2.08	5.30	0.77	41.63	14.96	46.92	15.73
YER137C	0.94	1.41	1.55	1.62	1.74	1.94	1.89	17.45	1.72	95.41	14.10	112.86	15.82
YDR177W	0.91	1.38	1.55	1.66	1.80	1.99	1.99	3.59	0.59	46.25	15.25	49.84	15.84
YNL032W	0.87	1.19	1.36	1.41	1.52	1.82	1.70	4.28	0.77	51.47	15.13	55.76	15.90
YHL008C	0.91	1.32	1.48	1.52	1.70	1.90	1.88	6.61	0.19	43.15	15.75	49.76	15.93
YBL024W	0.84	1.08	1.20	1.25	1.45	1.65	1.63	5.53	0.65	41.76	15.51	47.30	16.17
YDR388W	0.97	1.43	1.61	1.65	1.79	1.96	1.95	10.47	0.97	23.57	15.22	34.04	16.19
YMR265C	0.85	1.07	1.25	1.31	1.40	1.74	1.71	4.33	0.40	39.19	15.81	43.52	16.21
YGR105W	0.95	1.48	1.63	1.64	1.76	2.04	1.95	4.81	0.90	39.42	15.43	44.23	16.33
YDR516C	0.91	1.46	1.64	1.72	1.84	2.11	2.06	6.21	1.11	47.79	15.24	54.00	16.35
YEL007W	0.90	1.34	1.49	1.56	1.69	1.98	1.91	4.68	1.05	45.80	15.32	50.48	16.38
YMR255W	0.83	1.18	1.28	1.34	1.42	1.74	1.67	4.02	0.55	36.32	16.28	40.34	16.83
YGR155W	0.93	1.31	1.47	1.59	1.68	1.92	1.91	6.20	0.62	52.27	16.54	58.48	17.16
YGL206W	0.92	1.45	1.59	1.66	1.77	2.03	1.98	5.12	0.62	37.69	16.56	42.81	17.18
YJL053W	0.97	1.42	1.58	1.67	1.77	2.00	1.96	5.47	0.78	37.26	16.52	42.73	17.30
YNL255C	0.94	1.43	1.60	1.64	1.73	1.98	1.93	4.69	0.48	50.15	16.84	54.83	17.32
YKR011C	0.95	1.34	1.52	1.59	1.68	1.98	1.93	7.52	0.52	45.16	16.86	52.67	17.38
YJR102C	0.91	1.34	1.46	1.35	1.45	1.70	1.63	3.19	0.98	44.53	16.52	47.72	17.50
YPL119C	0.91	1.41	1.53	1.61	1.72	1.99	1.92	3.30	0.10	37.82	17.56	41.12	17.66
YLR149C	0.92	1.30	1.40	1.48	1.57	1.87	1.80	6.53	0.92	44.32	16.86	50.85	17.78
YPR069C	1.12	1.71	1.83	1.90	1.95	2.15	2.19	4.26	0.59	47.01	17.22	51.27	17.81
YLL038C	0.98	1.50	1.74	1.76	1.85	2.14	2.12	7.18	0.62	41.45	17.30	48.63	17.92
YGL064C	0.92	1.48	1.63	1.70	1.80	2.09	2.02	5.48	0.70	41.90	17.24	47.37	17.94
YKL120W	1.03	1.54	1.67	1.79	1.89	2.10	2.09	3.97	1.67	38.91	16.29	42.88	17.96
YNL229C	0.90	1.23	1.45	1.52	1.61	1.85	1.87	7.15	0.65	41.49	17.39	48.64	18.04
YEL011W	0.92	1.42	1.61	1.68	1.76	2.01	1.96	5.72	0.75	47.65	17.47	53.37	18.22
YNL265C	0.89	1.24	1.38	1.46	1.56	1.78	1.74	7.04	0.83	53.89	17.45	60.93	18.28
YIL010W	0.88	1.40	1.54	1.58	1.69	1.95	1.89	4.89	1.22	39.64	17.07	44.53	18.29
YOR214C	0.88	1.25	1.41	1.40	1.48	1.79	1.69	6.21	0.71	54.67	17.70	60.88	18.41
YNL135C	0.93	1.26	1.45	1.53	1.62	1.91	1.86	6.01	0.50	47.02	17.92	53.02	18.42
YIL017C	0.88	1.28	1.40	1.43	1.55	1.85	1.76	5.25	1.15	39.03	17.28	44.28	18.43
YGL016W	0.82	1.38	1.54	1.55	1.67	1.98	1.89	4.81	0.50	52.74	17.93	57.55	18.44
YGR231C	0.96	1.39	1.51	1.54	1.62	1.97	1.91	4.69	0.90	43.40	17.55	48.09	18.45
YOR358W	1.07	1.62	1.78	1.82	1.93	2.15	2.12	4.18	0.75	48.76	17.79	52.94	18.53
YNL157W	0.92	1.33	1.44	1.53	1.69	1.91	1.88	5.85	0.73	45.89	17.83	51.74	18.56
YKL070W	1.02	1.60	1.77	1.88	1.97	2.18	2.17	4.43	1.75	37.94	16.84	42.37	18.59
YPR114W	0.93	1.32	1.44	1.52	1.62	1.89	1.85	7.98	0.42	45.17	18.24	53.16	18.66
YKL101W	0.91	1.26	1.40	1.47	1.58	1.88	1.82	7.22	1.86	47.87	16.92	55.09	18.78
YPR164W	0.89	1.03	1.14	1.26	1.32	1.61	1.56	7.84	0.29	57.37	18.62	65.21	18.91
YPR063C	0.93	1.62	1.67	1.82	1.90	2.18	2.05	3.71	0.54	46.40	18.38	50.12	18.92
YBR114W	1.06	1.72	1.89	1.97	2.08	2.26	2.25	7.16	0.09	66.34	19.08	73.50	19.17
YER144C	1.00	1.55	1.70	1.80	1.94	2.10	2.09	17.92	1.94	98.90	17.26	116.82	19.20
YNL054W	0.87	1.26	1.36	1.46	1.55	1.90	1.82	5.41	1.16	30.96	18.12	36.37	19.28
YKR061W	0.94	1.33	1.48	1.55	1.66	1.92	1.88	6.52	0.55	42.89	18.74	49.41	19.29
YDR423C	0.92	1.31	1.45	1.50	1.60	1.89	1.83	7.29	0.89	48.40	18.50	55.69	19.39
YJR125C	0.90	1.28	1.39	1.43	1.54	1.82	1.73	6.11	1.92	47.48	17.51	53.59	19.43
YGR263C	1.03	1.70	1.82	1.92	1.99	2.19	2.21	5.68	1.07	48.53	18.54	54.21	19.62

ORF name	OD at 600 nm at sampling time points (hours)							GLUCOSE		FRUCTOSE		TOTAL SUGARS	
	0 h	20 h	27 h	44 h	66 h	93 h	113 h	120 h	146 h	120 h	146 h	120 h	146 h
YPL138C	0.86	1.32	1.42	1.47	1.57	1.66	1.74	5.82	0.45	29.74	19.20	35.56	19.66
YER089C	0.88	1.28	1.44	1.52	1.65	1.84	1.81	16.92	2.17	36.69	17.64	53.61	19.81
YBL003C	0.89	1.23	1.32	1.31	1.48	1.68	1.62	6.18	0.84	37.69	19.03	43.87	19.87
YGR178C	0.91	1.22	1.41	1.41	1.53	1.93	1.71	7.07	1.00	65.34	18.88	72.41	19.88
YLR090W	0.94	1.31	1.47	1.55	1.63	1.93	1.89	7.01	0.53	47.81	19.35	54.82	19.88
YGR007W	1.00	1.52	1.66	1.68	1.78	2.06	2.01	5.61	1.03	45.64	18.97	51.26	20.00
YNL141W	0.89	1.30	1.43	1.53	1.61	1.87	1.86	8.29	0.79	52.76	19.29	61.05	20.08
YPL260W	0.93	1.38	1.48	1.54	1.64	1.92	1.78	11.79	0.59	46.12	19.53	57.91	20.12
YHL029C	0.88	1.17	1.29	1.36	1.46	1.70	1.67	6.02	0.92	44.61	19.22	50.63	20.14
YPL098C	0.96	1.43	1.57	1.72	1.81	2.04	2.02	6.51	1.02	40.81	19.18	47.32	20.20
YGR168C	0.99	1.49	1.61	1.63	1.76	2.04	1.98	6.11	1.03	46.17	19.24	52.28	20.27
YHR032W	0.89	1.26	1.39	1.56	1.66	1.99	1.93	7.93	0.42	59.73	19.85	67.65	20.27
YMR232W	0.90	1.34	1.52	1.62	1.72	1.99	1.97	5.82	0.50	41.35	19.88	47.17	20.38
YDR385W	0.88	1.16	1.34	1.45	1.61	1.82	1.80	15.60	2.87	29.73	17.51	45.33	20.39
YGR017W	0.96	1.42	1.56	1.59	1.70	1.98	1.93	5.23	1.14	41.00	19.32	46.23	20.46
YNL024C	0.87	1.21	1.30	1.27	1.34	1.68	1.57	8.44	1.58	46.34	18.97	54.78	20.55
YDR438W	0.95	1.49	1.67	1.76	1.87	2.11	2.08	7.52	0.97	54.28	19.60	61.80	20.57
YGL027C	0.91	1.32	1.48	1.54	1.65	1.85	1.80	9.29	0.90	69.84	19.75	79.13	20.65
YGR068C	1.00	1.49	1.66	1.73	1.82	2.10	2.05	7.30	1.05	57.58	19.66	64.88	20.71
YNL134C	0.94	1.35	1.54	1.66	1.76	1.99	1.99	12.46	0.75	60.42	19.97	72.88	20.71
YGR004W	1.01	1.62	1.75	1.76	1.86	2.13	2.08	6.85	0.74	53.11	20.04	59.96	20.78
YBR204C	0.89	1.31	1.42	1.51	1.61	1.84	1.83	7.55	0.89	53.22	19.91	60.76	20.80
YGR232W	1.01	1.65	1.80	1.85	1.98	2.17	2.19	7.44	1.24	47.40	19.64	54.84	20.88
YOL098C	0.94	1.52	1.70	1.72	1.80	2.07	2.01	6.94	0.67	56.45	20.23	63.38	20.90
YLR452C	0.88	1.34	1.52	1.67	1.82	2.05	2.03	5.91	0.92	54.42	20.02	60.33	20.94
YER183C	0.93	1.48	1.65	1.71	1.83	2.11	2.03	8.30	0.84	60.01	20.12	68.31	20.96
YKL071W	0.94	1.48	1.65	1.74	1.87	2.09	2.06	5.30	1.76	41.39	19.30	46.69	21.06
YJR103W	0.93	1.28	1.37	1.37	1.46	1.76	1.64	7.94	1.78	51.79	19.30	59.73	21.08
YDL227C	0.91	1.37	1.53	1.61	1.71	2.00	2.03	8.49	0.68	56.29	20.43	64.78	21.11
YMR304W	0.84	1.13	1.27	1.29	1.35	1.68	1.58	6.80	1.20	39.79	19.97	46.59	21.17
YNL190W	0.85	1.18	1.29	1.32	1.43	1.76	1.65	6.76	0.79	50.04	20.38	56.80	21.17
YJR100C	0.91	1.45	1.60	1.67	1.78	1.99	1.97	5.74	1.73	47.67	19.49	53.41	21.22
YGR162W	1.06	1.50	1.72	1.85	2.00	2.25	2.24	5.87	0.92	46.77	20.42	52.64	21.34
YHR155W	0.85	1.22	1.36	1.38	1.49	1.79	1.70	5.55	1.38	42.91	19.98	48.46	21.36
YIL076W	0.92	1.30	1.45	1.51	1.62	1.88	1.84	4.55	1.07	37.59	20.29	42.14	21.37
YGR015C	1.01	1.65	1.82	1.88	1.98	2.25	2.21	6.28	1.07	51.10	20.34	57.38	21.41
YGR237C	0.92	1.33	1.47	1.50	1.56	1.90	1.78	7.92	1.06	52.96	20.42	60.88	21.48
YGR096W	1.00	1.49	1.62	1.65	1.77	2.01	1.96	6.06	0.99	42.37	20.55	48.42	21.53
YPR070W	0.91	1.26	1.28	1.43	1.51	1.60	1.65	4.69	0.61	46.58	20.96	51.27	21.57
YEL017C-A	0.94	1.43	1.58	1.66	1.80	1.98	1.96	16.09	2.49	38.15	19.11	54.25	21.60
YNL311C	0.92	1.37	1.56	1.59	1.72	1.95	1.90	8.37	0.89	68.63	20.74	77.00	21.63
YDR375C	0.94	1.38	1.58	1.64	1.75	2.03	1.98	6.47	0.73	56.00	20.90	62.47	21.63
YGL139W	0.85	1.28	1.43	1.49	1.65	1.95	1.88	3.06	1.19	35.74	20.48	38.79	21.67
YNL146W	0.84	1.20	1.36	1.41	1.49	1.79	1.73	5.38	1.85	39.69	19.82	45.07	21.67
YLR150W	0.91	1.39	1.54	1.65	1.74	2.03	1.97	6.96	1.08	42.97	20.61	49.93	21.69
YGR180C	1.04	1.70	1.83	1.92	2.01	2.19	2.17	5.94	1.30	43.22	20.42	49.17	21.72
YKL117W	0.94	1.37	1.53	1.63	1.74	2.00	1.96	6.56	1.58	49.19	20.15	55.75	21.72
YNL183C	0.92	1.30	1.50	1.51	1.60	1.91	1.84	7.82	1.10	53.45	20.70	61.27	21.80
YGR021W	1.02	1.61	1.78	1.85	1.96	2.18	2.17	7.15	1.26	55.43	20.59	62.58	21.85
YPL046C	0.91	1.31	1.39	1.54	1.65	1.87	1.85	6.93	1.18	40.10	20.70	47.03	21.88
YJR097W	0.95	1.38	1.56	1.66	1.79	2.00	1.98	7.74	1.81	49.66	20.17	57.40	21.98
YGL211W	0.91	1.35	1.50	1.56	1.70	1.99	1.93	4.85	1.26	42.19	20.84	47.04	22.10
YER150W	0.95	1.48	1.63	1.74	1.88	2.05	2.03	16.74	2.11	92.25	20.04	108.99	22.15
YBL028C	0.87	1.31	1.63	1.41	1.62	1.83	1.80	7.44	1.53	48.12	20.67	55.56	22.20
YDR378C	0.97	1.57	1.76	1.83	1.93	2.17	2.15	7.02	0.84	57.44	21.39	64.46	22.23
YIL007C	0.90	1.26	1.38	1.44	1.53	1.75	1.73	5.85	1.51	39.99	20.78	45.84	22.29
YNL051W	0.93	1.30	1.42	1.43	1.50	1.81	1.71	6.26	1.17	52.55	21.16	58.80	22.33
YJR148W	0.90	1.31	1.42	1.45	1.57	1.85	1.76	8.83	2.29	53.95	20.04	62.78	22.33
YIL044C	0.86	1.19	1.31	1.31	1.40	1.74	1.62	4.39	1.51	42.72	20.90	47.10	22.41
YGR221C	0.92	1.40	1.57	1.64	1.72	2.01	1.94	6.70	1.10	47.16	21.33	53.87	22.43
YKR101W	0.88	1.30	1.47	1.44	1.59	1.87	1.85	10.20	1.02	61.40	21.43	71.60	22.45
YNL146C-A	0.88	1.30	1.49	1.57	1.67	1.96	1.90	6.74	2.49	42.64	19.97	49.38	22.46
YER051W	0.88	1.25	1.40	1.49	1.61	1.84	1.81	9.08	1.05	50.48	21.46	59.55	22.51
YLR292C	0.88	1.12	1.21	1.25	1.30	1.55	1.49	7.47	0.81	47.48	21.78	54.95	22.59
YPL198W	0.95	1.46	1.58	1.64	1.74	2.03	1.90	10.90	0.96	44.97	21.64	55.86	22.60
YGR066C	1.03	1.75	1.88	1.89	1.99	2.19	2.15	6.68	1.34	54.20	21.26	60.89	22.60
YFR032C-A	0.94	1.34	1.50	1.59	1.70	2.00	1.93	7.51	1.03	51.28	21.58	58.79	22.61
YNL068C	0.88	1.33	1.52	1.59	1.69	2.02	1.94	6.28	1.37	37.55	21.37	43.83	22.74
YNL042W-B	0.88	1.29	1.48	1.57	1.67	1.97	1.93	5.96	1.05	41.49	21.69	47.44	22.75
YNL202W	0.85	1.21	1.40	1.46	1.55	1.84	1.83	5.92	1.21	40.16	21.61	46.08	22.81
YIL041W	0.88	1.25	1.44	1.72	1.72	1.79	1.75	4.71	1.41	45.10	21.43	49.81	22.84
YGR035W-A	0.90	1.35	1.59	1.69	1.80	2.05	2.02	6.63	0.13	47.71	22.72	54.34	22.85
YAL049C	0.91	1.03	1.20	1.51	1.65	1.99	1.95	8.82	1.26	53.27	21.61	62.09	22.87
YDL091C	0.92	1.47	1.61	1.75	1.87	2.03	2.08	6.25	0.84	57.13	22.06	63.38	22.91
YNL116W	0.89	1.20	1.32	1.40	1.52	1.73	1.71	9.64	1.18	51.66	21.75	61.29	22.93
YLR052W	0.91	1.24	1.35	1.42	1.54	1.84	1.78	8.53	1.61	47.83	21.34	56.35	22.95
YJR151W-A	0.90	1.33	1.44	1.50	1.61	1.88	1.79	8.31	2.32	47.87	20.67	56.18	22.99
YDR479C	0.84	1.25	1.44	1.55	1.67	1.97	1.91	6.41	0.93	50.19	22.08	56.60	23.01
YKL128C	0.96	1.40	1.49	1.57	1.68	1.95	1.88	7.44	1.87	50.17	21.16	57.60	23.03
YJR124C	0.95	1.30	1.38	1.38	1.47	1.76	1.64	8.85	1.90	54.07	21.16	62.92	23.05
YJR133W	1.02	1.62	1.78	1.87	1.96	2.17	2.16	6.06	1.62	44.49	21.43	50.56	23.06
YDL194W	0.92	1.34	1.55	1.66	1.76	2.02	2.01	7.98	0.70	59.19	22.37	67.17	23.07
YGR169C-A	0.94	1.31	1.47	1.56	1.65	1.89	1.86	6.63	1.13	43.07	21.96	49.70	23.09
YOR054C	0.87	1.36	1.56	1.65	1.77	2.03	1.97	8.33	1.01	65.53	22.11	73.86	23.11
YDR392W	0.96	1.40	1.53	1.61	1.75	1.93	1.91	15.54	2.24	44.26	20.88	59.79	23.12
YKL207W	0.91	1.39	1.54	1.58	1.67	1.96	1.90	8.19	1.15	49.52	22.02	57.71	23.17
YIL008W	0.86	1.18	1.31	1.40	1.51	1.76	1.72	4.55	1.50	39.58	21.75	44.13	23.24
YHR193C	0.89	1.23	1.35	1.35	1.46	1.77	1.64	8.13	1.75	50.46	21.54	58.59	23.28
YOR334W	0.92	1.36	1.44	1.59	1.67	1.95	1.91	6.81	1.48	38.33	21.81	45.13	23.29
YLR170C	0.98	1.49	1.66	1.75	1.84	2.08	2.05	8.53	0.45	45.80	22.95	54.33	23.41
YOR213C	0.94	1.37	1.55	1.59	1.70	1.96	1.91	6.50	0.78	51.43	22.70	57.93	23.47
YJR142W	0.94	1.40	1.58	1.66	1.77	2.00	1.99	9.22	2.52	50.28	20.97	59.51	23.49
YLL057C	0.89	1.24	1.38	1.44	1.51	1.84	1.74	9.97	1.11	50.56	22.43	60.53	23.53
YFL049W	0.92	1.40	1.56	1.62	1.72	2.03	1.94	6.90	1.00	50.50	22.55	57.40	23.55
YKR054C	0.88	1.24	1.38	1.44	1.60	1.90	1.83	6.09	1.31	43.73	22.25	49.82	23.56
YDR015C	0.88	1.31	1.44	1.54	1.64	1.88	1.86	9.44	1.25	57.91	22.31	67.35	23.56
YOR002W	0.98	1.40	1.55	1.58	1.70	1.93	1.88	8.28	1.04	61.52	22.57	69.79	23.61
YOR139C	1.00	1.40	1.54	1.58	1.69	1.91	1.88	8.85	1.07	65.36	22.57	74.21	23.64
YKL047W	0.87	1.24	1.33	1.38	1.49	1.81	1.69	7.89	2.05	52.96	21.60	60.85	23.65
YHR195W	0.92	1.37	1.51	1.54	1.66	1.93	1.85	6.97	1.52	52.31	22.15	59.28	23.67
YJR149W	0.93	1.40	1.49	1.54	1.65	1.92	1.83	8.11	2.27	52.39	21.52	60.50	23.79
YHR060W	0.89	1.21	1.39	1.57	1.68	1.99	1.96	6.66	1.22	48.25	22.57	54.91	23.80
YIR037W	0.95	1.46	1.60	1.62	1.73	2.02	2.01	8.61	1.25	51.10	22.55	59.72	23.80
YIL098C	0.90	1.31	1.45	1.53	1.60	1.88	1.83	7.70	1.93	47.92	21.87	55.62	23.80
YJR051W	1.01	1.35	1.51	1.49	1.57	1.87	1.70	7.80	1.09	56.15	22.72	63.95	23.80
YBR264C	0.99	1.63	1.78	1.90	1.99	2.15	2.18	5.19	0.56	41.26	23.31	46.44	23.86
YNL204C	0.88	1.34	1.48	1.59	1.73	1.91	1.89	7.80	1.35	41.87	22.51	49.67	23.87
YPL259C	0.92	1.30	1.31	1.43	1.52	1.58	1.64	7.53	1.25	47.17	22.75	54.70	24.00
YDR428C	0.98	1.52	1.71	1.79	1.88	2.12	2.11	7.42	1.05	52.99	22.97	60.42	24.02
YKL018C-A	0.98	1.45	1.59	1.65	1.74	1.97	1.92	7.23	2.22	50.03	21.81	57.26	24.03
YMR105W-A	1.03	1.51	1.68	1.77	1.87	2.10	2.08	7.83	1.22	47.96	22.84	55.79	24.06
YJL083W	0.90	1.26	1.45	1.46	1.56	1.86	1.75	6.87	0.88	55.61	23.22	62.48	24.10
YGL080W	0.92	1.60	1.77	1.80	1.90	2.14	2.09	5.12	1.03	49.39	23.10	54.51	24.12
YKR051W	0.87	1.19	1.28	1.30	1.45	1.70	1.63	10.64	1.18	55.55	22.95	66.19	24.13
YGR227W	0.88	1.21	1.34	1.39	1.52	1.69	1.69	6.02	0.87	49.64	23.29	55.66	24.16
YOR225W	0.97	1.65	1.80	1.82	1.91	2.14	2.09	8.82	0.87	66.57	23.35	75.39	24.22
YKL127W	0.95	1.42	1.60	1.69	1.82	2.05	2.02	5.28	2.15	41.76	22.08	47.05	24.24
YGL231C	0.87	1.47	1.61	1.64	1.74	2.01	1.93	8.79	1.08	52.33	23.18	61.12	24.26
YOR099W	0.89	1.14	1.41	1.53	1.65	1.99	1.88	7.77	1.60	62.41	22.74	70.18	24.34
YGL246W	0.91	1.44	1.57	1.65	1.76	2.02	1.96	5.91	1.08	48.33	23.26	54.24	24.35
YCL008C	0.93	1.33	1.53	1.56	1.75	1.99	1.95	6.74	0.01	67.42	24.36	74.16	24.36
YGR085C	1.01	1.45	1.60	1.66	1.77	2.01	1.95	7.92	1.30	56.11	23.10	64.04	24.39
YIR019C	1.00	1.57	1.74	1.83	1.92	2.14	2.10	6.18	1.10	49.04	23.31	55.22	24.41
YHL014C	0.88	1.27	1.42	1.46	1.69	1.85	1.82	7.57	1.63	39.53	22.81	47.10	24.44
YAL031C	0.89	1.31	1.45	1.44	1.67	1.87	1.86	7.81	1.69	40.02	22.75	47.83	24.44
YGR283C	1.01	1.47	1.61	1.69	1.73	2.03	1.95	7.31	1.33	50.52	23.12	57.83	24.44
YLR018C	0.96	1.45	1.62	1.72	1.80	2.03	2.02	6.61	0.98	41.88	23.48	48.49	24.47
YIL170W	0.90	1.24	1.37	1.43	1.49	1.82	1.76	7.19	1.62	50.52	22.86	57.71	24.48
YMR261C	0.85	1.20	1.33	1.37	1.44	1.78	1.68	7.54	2.04	46.48	22.51	54.02	24.55
YPL164C	0.92	1.38	1.49	1.55	1.65	1.96	1.80	6.25	0.84	43.04	23.71	49.30	24.55
YKL017C	1.03	1.60	1.77	1.87	1.97	2.18	2.18	5.41	2.07	42.33	22.51	47.74	24.57
YHR168W	0.87	1.31	1.48	1.56	1.63	1.88	1.86	7.23	1.14	50.05	23.50	57.28	24.64
YGL213C	0.88	1.33	1.48	1.54	1.67	1.96	1.89	6.78	1.20	49.99	23.47	56.78	24.67
YNL121C	0.94	1.41	1.55	1.66	1.78	1.97	1.97	10.81	0.95	58.16	23.74	68.97	24.69
YGR188C	0.94	1.35	1.52	1.62	1.72	1.97	1.97	7.55	1.22	48.99	23.48	56.54	24.70

ORF name	OD at 600 nm at sampling time points (hours)							GLUCOSE		FRUCTOSE		TOTAL SUGARS	
	0 h	20 h	27 h	44 h	66 h	93 h	113 h	120 h	146 h	120 h	146 h	120 h	146 h
YCL001W-A	0.91	1.46	1.62	1.74	1.85	2.04	2.08	6.23	0.98	49.62	23.77	55.85	24.75
YGL127C	0.92	1.46	1.61	1.67	1.78	2.05	1.98	6.57	1.18	48.70	23.58	55.28	24.76
YIL077C	0.87	1.19	1.31	1.36	1.43	1.68	1.63	6.18	0.67	43.89	24.09	50.07	24.76
YOR186W	0.93	1.51	1.66	1.71	1.78	1.87	2.02	7.04	1.08	42.64	23.69	49.68	24.76
YGL079W	0.92	1.59	1.75	1.77	1.88	2.13	2.05	6.68	1.12	51.02	23.64	57.71	24.77
YKL034W	0.88	1.30	1.47	1.53	1.64	1.89	1.83	7.24	2.18	45.64	22.63	52.88	24.81
YJR075W	0.93	1.28	1.44	1.44	1.52	1.85	1.72	7.20	1.01	57.66	23.81	64.85	24.82
YGL119W	0.92	1.42	1.56	1.62	1.72	2.01	1.94	5.53	1.07	42.60	23.75	48.13	24.82
YAR064W	0.89	1.33	1.45	1.43	1.65	1.85	1.80	9.96	1.92	47.94	23.01	57.90	24.93
YKR026C	0.91	1.31	1.45	1.48	1.61	1.90	1.81	10.58	1.52	50.89	23.42	61.47	24.94
YGR181W	0.95	1.40	1.54	1.60	1.72	1.99	1.92	6.96	1.07	50.81	23.88	57.77	24.95
YKL137W	0.91	1.37	1.50	1.57	1.67	1.98	1.92	6.02	0.30	42.91	24.65	48.94	24.95
YMR266W	0.89	1.32	1.48	1.59	1.68	1.96	1.92	7.52	1.60	48.45	23.36	55.97	24.96
YFR043C	0.89	1.34	1.49	1.51	1.64	1.93	1.83	9.92	1.85	59.78	23.12	69.70	24.97
YCL009C	0.89	1.49	1.71	1.71	1.82	2.07	2.10	7.14	1.17	51.38	23.83	58.52	25.00
YFL051C	0.90	1.39	1.54	1.58	1.71	2.01	1.92	7.68	1.44	53.23	23.58	60.90	25.02
YLR221C	1.00	1.45	1.60	1.71	1.82	2.06	2.04	7.68	0.72	51.61	24.33	59.29	25.05
YNL056W	0.82	1.13	1.21	1.21	1.26	1.65	1.50	5.55	2.02	38.15	23.04	43.71	25.06
YKR015C	0.94	1.41	1.54	1.56	1.69	1.93	1.88	10.35	1.18	59.53	23.95	69.88	25.13
YPR117W	0.96	1.47	1.54	1.70	1.78	2.05	2.01	4.70	0.45	49.37	24.68	54.07	25.14
YLR097C	0.97	1.39	1.56	1.65	1.71	2.03	2.02	7.58	1.15	46.81	24.01	54.39	25.16
YHR157W	0.85	1.23	1.35	1.36	1.46	1.79	1.69	5.49	2.28	42.21	22.88	47.70	25.17
YKL124W	0.90	1.35	1.47	1.50	1.68	1.87	1.86	5.96	1.69	35.10	23.48	41.06	25.17
YDR420W	0.85	1.04	1.17	1.30	1.39	1.65	1.61	8.79	0.99	56.76	24.21	65.54	25.20
YPR125W	0.98	1.30	1.38	1.51	1.61	1.67	1.73	6.20	0.91	57.70	24.30	63.91	25.21
YIL164C	0.83	1.19	1.37	1.41	1.49	2.01	1.71	7.72	0.88	68.17	24.34	75.88	25.22
YHR189W	0.86	1.26	1.40	1.43	1.55	1.86	1.75	8.51	2.11	53.76	23.16	62.27	25.27
YER044C	0.94	1.29	1.51	1.66	1.82	2.09	2.04	8.40	2.21	52.64	23.14	61.05	25.35
YGR243W	0.90	1.25	1.40	1.46	1.56	1.83	1.77	7.09	1.55	47.69	23.81	54.78	25.36
YDL178W	0.87	1.40	1.59	1.64	1.75	2.03	2.03	7.15	1.14	50.85	24.23	58.00	25.37
YNL206C	0.83	1.23	1.40	1.49	1.59	1.83	1.82	6.45	1.42	45.43	23.95	51.88	25.37
YJR129C	0.91	1.49	1.64	1.67	1.80	2.04	2.05	11.23	2.07	67.41	23.31	78.63	25.38
YHR203C	0.86	1.12	1.28	1.39	1.51	1.77	1.74	5.52	1.65	44.32	23.73	49.84	25.38
YAL002W	0.94	1.42	1.53	1.60	1.78	1.95	1.93	9.42	2.17	45.02	23.22	54.43	25.39
YKR027W	0.89	1.29	1.42	1.43	1.57	1.87	1.80	10.99	1.41	56.04	23.98	67.03	25.39
YNL090W	0.85	1.15	1.25	1.30	1.41	1.63	1.59	9.08	1.24	51.09	24.18	60.18	25.42
YGR016W	1.02	1.67	1.82	1.89	1.98	2.20	2.19	6.63	1.26	55.22	24.17	61.84	25.44
YGR028W	0.91	1.39	1.59	1.66	1.76	2.05	1.98	7.32	1.62	45.78	23.83	53.10	25.45
YLL062C	0.91	1.26	1.41	1.55	1.64	1.94	1.88	8.21	1.69	47.44	23.77	55.65	25.47
YDL096C	1.04	1.46	1.68	2.08	1.99	2.18	2.17	6.41	0.97	50.47	24.50	56.88	25.47
YKR097W	0.94	1.46	1.63	1.72	1.84	2.05	2.04	9.22	1.32	54.38	24.15	63.60	25.48
YGR056W	0.99	1.53	1.70	1.75	1.87	2.13	2.08	7.35	1.54	49.15	24.00	56.50	25.54
YOR178C	0.93	1.33	1.46	1.50	1.59	1.84	1.79	7.53	0.95	69.65	24.59	77.18	25.54
YKR036C	0.90	1.46	1.60	1.53	1.74	1.98	2.01	9.35	1.20	58.47	24.39	68.42	25.59
YPL240C	0.93	1.45	1.57	1.65	1.75	2.04	1.90	10.39	1.03	52.45	24.56	62.84	25.59
YMR233W	0.88	1.36	1.59	1.63	1.73	2.04	2.07	6.78	1.06	40.69	24.53	47.47	25.60
YHR204W	0.85	1.16	1.27	1.32	1.41	1.66	1.59	6.96	2.44	45.88	23.18	52.84	25.62
YGR133W	0.98	1.52	1.67	1.69	1.80	2.08	2.01	7.61	1.60	51.30	24.02	58.91	25.63
YGR061C	1.08	1.61	1.72	1.69	1.80	2.07	1.97	9.35	1.53	57.34	24.15	66.70	25.68
YNL050C	0.87	1.28	1.37	1.40	1.49	1.83	1.74	6.68	1.56	40.61	24.12	47.29	25.69
YLR144C	0.95	1.41	1.56	1.67	1.77	2.01	1.99	8.46	1.19	50.65	24.51	59.12	25.70
YKR077W	0.90	1.28	1.43	1.47	1.59	1.87	1.79	9.56	1.42	57.81	24.30	67.37	25.72
YKL039W	0.98	1.40	1.47	1.50	1.60	1.88	1.78	12.00	2.95	57.60	22.78	69.60	25.73
YBR268W	0.92	1.52	1.67	1.80	1.91	2.11	2.14	4.29	1.05	39.30	24.68	43.59	25.73
YMR124W	1.01	1.59	1.73	1.80	1.89	2.00	2.11	10.09	1.54	52.25	24.21	62.34	25.75
YJR115W	0.99	1.53	1.69	1.79	1.88	2.10	2.09	7.16	1.81	44.77	23.96	51.93	25.77
YJL142C	0.90	1.50	1.69	1.70	1.79	2.09	1.98	8.15	1.20	67.05	24.57	75.20	25.77
YOR339C	0.95	1.48	1.55	1.71	1.79	2.03	2.01	7.68	1.42	48.12	24.36	55.80	25.77
YKL162C	0.91	1.42	1.56	1.62	1.74	2.02	1.96	7.87	1.05	53.76	24.74	61.62	25.79
YNL136W	0.62	0.75	0.83	0.90	0.95	1.17	1.14	8.52	1.91	46.72	23.92	55.23	25.83
YDR391C	0.96	1.41	1.61	1.81	1.93	2.08	2.10	15.50	3.98	25.19	21.85	40.69	25.83
YGR079W	0.88	1.26	1.44	1.50	1.64	1.89	1.85	6.16	1.54	49.93	24.32	56.09	25.85
YGR268C	1.08	1.75	1.88	1.96	2.04	2.23	2.25	7.79	1.42	52.10	24.47	59.89	25.89
YNL101W	0.93	1.39	1.59	1.67	1.76	2.05	2.00	7.71	1.95	43.97	23.95	51.68	25.90
YHR002W	0.83	1.11	1.30	1.39	1.50	1.76	1.74	10.14	1.32	69.01	24.59	79.14	25.91
YFL048C	0.85	1.26	1.43	1.52	1.62	1.93	1.90	6.35	0.67	50.40	25.27	56.75	25.93
YOR101W	0.93	1.47	1.64	1.66	1.75	2.03	1.95	8.59	1.18	60.58	24.76	69.17	25.94
YGR207C	1.02	1.64	1.77	1.83	1.93	2.15	2.12	9.51	1.52	62.82	24.42	72.34	25.95
YDL245C	0.88	1.25	1.45	1.51	1.61	1.91	1.87	11.62	1.15	63.85	24.86	75.47	26.01
YHR004C	0.93	1.24	1.40	1.49	1.60	1.81	1.81	9.02	1.22	61.50	24.80	70.51	26.02
YGR240C-A	0.96	1.37	1.51	1.55	1.61	1.92	1.82	8.22	1.65	49.52	24.40	57.75	26.05
YIL009W	0.90	1.24	1.35	1.36	1.45	1.76	1.64	6.38	1.46	45.78	24.63	52.16	26.09
YHR153C	0.87	1.21	1.34	1.40	1.51	1.76	1.70	6.42	1.81	45.74	24.28	52.16	26.09
YHR016C	0.91	1.23	1.39	1.46	1.59	1.80	1.80	7.79	1.20	60.01	24.92	67.80	26.12
YGL178W	1.01	1.51	1.69	1.78	1.88	2.10	2.10	7.89	2.40	58.20	23.75	66.10	26.15
YGR235C	0.99	1.56	1.69	1.73	1.82	2.08	2.03	7.42	1.35	50.09	24.80	57.51	26.15
YIL006W	0.93	1.29	1.45	1.54	1.65	1.86	1.84	7.37	1.65	54.42	24.53	62.37	26.17
YNL237W	0.94	1.46	1.62	1.71	1.82	1.91	2.07	8.77	1.39	49.23	24.80	58.00	26.19
YPL199C	0.95	1.49	1.55	1.64	1.75	2.03	1.89	8.43	1.19	46.48	25.00	54.91	26.20
YBR269C	0.91	1.46	1.64	1.74	1.86	2.05	2.08	5.26	1.00	38.47	25.20	43.72	26.20
YGR208W	0.97	1.49	1.64	1.68	1.81	2.05	2.01	7.21	1.66	46.62	24.55	53.83	26.21
YER048C	0.90	1.44	1.61	1.71	1.83	2.11	2.12	6.91	1.25	49.56	25.03	56.47	26.29
YHR003C	0.83	1.23	1.44	1.49	1.56	1.85	1.78	7.37	0.69	61.34	25.62	68.71	26.30
YGR146C	0.96	1.46	1.61	1.64	1.73	2.03	1.95	8.35	1.43	58.32	24.91	66.67	26.34
YNL314W	0.93	1.31	1.46	1.46	1.57	1.82	1.75	11.20	1.33	70.33	25.03	81.53	26.37
YNL023C	0.84	1.21	1.27	1.27	1.33	1.69	1.55	9.04	2.13	47.34	24.24	56.38	26.37
YLR265C	1.06	1.60	1.78	1.87	1.96	2.19	2.18	8.10	1.00	53.52	25.38	61.62	26.38
YPL192C	0.85	1.16	1.25	1.28	1.35	1.41	1.48	7.30	1.24	24.31	25.15	31.61	26.39
YGR226C	0.86	1.12	1.25	1.26	1.36	1.61	1.51	7.00	1.24	48.43	25.29	55.43	26.52
YPL264C	0.91	1.37	1.39	1.53	1.63	1.94	1.79	8.46	1.35	51.99	25.18	60.44	26.53
YGR081C	1.01	1.51	1.69	1.76	1.87	2.14	2.09	9.37	1.54	53.74	25.01	63.10	26.55
YJR116W	0.98	1.50	1.66	1.74	1.85	2.09	2.06	6.81	2.09	45.16	24.49	51.97	26.58
YIL027C	0.91	1.36	1.52	1.59	1.70	1.90	1.87	7.98	1.55	52.62	25.08	60.60	26.63
YPL002C	0.97	1.47	1.59	1.60	1.65	1.94	1.85	5.59	0.63	66.22	26.05	71.80	26.68
YHR209W	0.88	1.40	1.57	1.63	1.73	1.99	1.94	4.75	1.72	42.83	24.97	47.58	26.69
YHR175W-A	0.87	1.27	1.57	1.59	1.55	1.78	1.76	5.58	1.90	44.88	24.80	50.46	26.70
YIL002W-A	0.85	1.26	1.40	1.44	1.56	1.83	1.74	9.59	2.27	57.87	24.44	67.46	26.71
YGR212W	0.87	1.25	1.37	1.39	1.49	1.84	1.70	6.68	1.61	48.90	25.12	55.58	26.73
YKL087C	0.96	1.54	1.67	1.74	1.86	2.08	2.04	7.43	2.70	50.38	24.06	57.81	26.76
YIL137C	0.86	1.18	1.32	1.35	1.44	1.76	1.67	5.37	1.35	45.56	25.46	50.94	26.81
YJL047C	0.99	1.46	1.65	1.71	1.82	2.07	1.99	6.51	0.95	60.56	25.88	67.07	26.82
YMR317W	0.92	1.37	1.53	1.60	1.69	1.98	1.94	7.15	1.61	41.45	25.24	48.60	26.85
YGR271W	0.99	1.54	1.69	1.77	1.85	2.11	2.07	6.49	1.23	46.50	25.62	52.99	26.85
YNL049C	0.88	1.26	1.46	1.51	1.60	1.91	1.85	8.65	1.52	46.72	25.35	55.36	26.88
YGR071C	0.89	1.23	1.42	1.45	1.58	1.87	1.77	7.63	1.67	53.29	25.22	60.91	26.89
YBR272C	0.87	1.36	1.58	1.60	1.72	1.98	2.01	8.40	1.10	59.68	25.79	68.09	26.89
YGR143W	0.98	1.51	1.66	1.74	1.88	1.90	2.03	8.15	1.10	62.34	25.79	70.48	26.89
YKR013W	0.91	1.35	1.50	1.55	1.65	1.92	1.86	9.65	1.45	47.32	25.44	56.97	26.90
YNR032C-A	0.91	1.36	1.54	1.60	1.73	1.98	1.92	10.49	1.16	74.11	25.75	84.61	26.91
YLR081W	0.87	1.29	1.47	1.54	1.67	1.92	1.85	9.67	1.07	64.91	25.83	74.58	26.91
YGR236C	1.00	1.50	1.61	1.62	1.71	1.98	1.90	7.42	1.69	52.37	25.22	59.79	26.91
YPL121C	0.93	1.45	1.55	1.64	1.73	1.82	1.90	6.45	0.98	45.09	25.94	51.55	26.93
YDR379C-A	1.00	1.57	1.74	1.83	1.91	2.17	2.12	8.77	1.20	59.55	25.73	68.32	26.93
YMR279C	0.84	1.17	1.30	1.32	1.40	1.73	1.63	8.31	2.08	49.35	24.86	57.66	26.93
YGR033C	0.84	1.23	1.42	1.47	1.59	1.88	1.82	6.26	2.01	43.87	24.97	50.13	26.98
YGR234W	0.97	1.52	1.67	1.74	1.84	2.11	2.04	8.81	1.73	52.41	25.24	61.22	26.98
YHL023C	0.88	1.24	1.48	1.57	1.67	1.98	1.98	6.30	1.87	48.37	25.12	54.67	26.99
YGR199W	0.97	1.41	1.59	1.71	1.82	2.02	2.02	10.86	1.84	53.27	25.15	64.13	26.99
YGR286C	1.02	1.60	1.73	1.77	1.89	2.10	2.06	7.89	1.62	51.41	25.37	59.30	27.00
YDR342C	0.88	1.18	1.37	1.46	1.55	1.81	1.77	10.57	1.58	58.16	25.41	68.73	27.00
YKL038W	0.95	1.41	1.60	1.63	1.77	2.01	1.93	7.62	1.29	57.83	25.75	65.45	27.04
YPR065W	0.90	1.34	1.36	1.51	1.61	1.87	1.75	7.12	0.86	50.63	26.17	57.75	27.04
YHR030C	0.90	1.15	1.28	1.43	1.54	1.83	1.72	8.67	1.55	61.88	25.50	70.55	27.05
YLR040C	0.87	1.26	1.43	1.46	1.60	1.85	1.75	8.81	1.72	64.91	25.37	73.72	27.09
YIR005W	0.87	1.11	1.23	1.31	1.36	1.61	1.56	7.02	1.56	53.72	25.56	60.73	27.12
YAL015C	0.85	1.35	1.51	1.52	1.73	1.92	1.87	7.35	1.21	54.71	25.94	62.05	27.15
YER123W	0.95	1.38	1.54	1.66	1.80	1.98	1.97	12.10	1.96	35.85	25.27	47.95	27.22
YKL206C	0.94	1.36	1.50	1.54	1.64	1.93	1.88	9.08	0.96	48.76	26.29	57.84	27.25
YDR036C	0.92	1.43	1.58	1.70	1.79	2.01	2.01	11.05	1.65	60.06	25.62	71.12	27.26
YPL127C	0.90	1.38	1.47	1.55	1.66	1.75	1.83	5.41	1.06	37.61	26.20	43.02	27.27
YIL120W	0.93	1.36	1.52	1.80	1.78	1.89	1.88	7.62	1.53	57.60	25.76	65.22	27.30
YMR169C	0.96	1.61	1.76	1.82	1.90	1.97	2.14	8.77	0.99	57.32	26.32	66.10	27.31
YIL089W	0.88	1.33	1.45	1.50	1.59	1.87	1.82	7.89	1.98	53.35	25.33	61.23	27.31
YIL135C	0.94	1.20	1.30	1.40	1.48	1.79	1.63	12.09	2.30	60.70	25.03	72.79	27.33
YIL030C	0.82	1.07	1.24	1.32	1.41	1.70	1.65	5.24	1.58	46.46	25.75	51.70	27.33

ORF name	OD at 600 nm at sampling time points (hours)							GLUCOSE		FRUCTOSE		TOTAL SUGARS	
	0 h	20 h	27 h	44 h	66 h	93 h	113 h	120 h	146 h	120 h	146 h	120 h	146 h
YPL014W	0.99	1.57	1.67	1.84	1.94	2.04	2.08	8.20	1.47	46.70	25.88	54.90	27.35
YGL212W	0.93	1.46	1.60	1.66	1.78	2.05	1.99	8.24	1.44	54.13	25.92	62.36	27.36
YDR343C	0.86	1.15	1.34	1.45	1.55	1.79	1.77	11.96	1.53	64.03	25.85	75.99	27.38
YLR164W	0.95	1.31	1.50	1.59	1.68	1.95	1.89	7.60	0.80	48.86	26.58	56.46	27.38
YIR018C-A	0.85	1.00	1.13	1.20	1.26	1.53	1.45	6.87	1.69	50.23	25.71	57.09	27.40
YLR053C	0.89	1.38	1.53	1.61	1.71	2.01	1.94	9.53	1.70	49.93	25.74	59.46	27.44
YPL041C	0.89	1.34	1.60	1.69	1.79	2.04	1.99	8.55	1.60	49.11	25.85	57.67	27.45
YDR436W	0.95	1.46	1.59	1.69	1.78	2.01	2.00	8.22	1.73	53.24	25.74	61.47	27.47
YFR033C	0.91	1.44	1.59	1.64	1.75	2.03	1.95	7.92	1.61	59.47	25.86	67.39	27.47
YMR234W	0.94	1.43	1.60	1.71	1.82	2.06	2.06	7.71	1.30	49.19	26.17	56.90	27.47
YGR197C	0.93	1.33	1.49	1.54	1.65	1.96	1.86	7.29	1.58	47.16	25.90	54.46	27.48
YBR129C	1.01	1.47	1.62	1.72	1.87	2.06	2.04	10.27	1.18	75.94	26.32	86.21	27.50
YBR195C	0.90	1.29	1.37	1.54	1.64	1.93	1.89	7.67	1.28	51.48	26.23	59.15	27.51
YGR214W	1.03	1.57	1.72	1.78	1.88	2.13	2.09	8.70	1.78	51.20	25.75	59.90	27.53
YDL117W	0.95	1.39	1.60	1.85	1.85	2.00	1.98	8.89	1.11	67.03	26.44	75.92	27.55
YLR151C	0.88	1.29	1.44	1.55	1.64	1.96	1.88	9.14	1.51	51.53	26.06	60.67	27.57
YMR130W	0.97	1.47	1.59	1.65	1.71	1.87	1.96	9.29	1.80	41.26	25.82	50.54	27.62
YJR111C	0.85	1.16	1.34	1.47	1.55	1.81	1.78	6.96	1.90	46.66	25.75	53.61	27.65
YHL033C	0.86	1.14	1.29	1.34	1.50	1.68	1.65	7.79	1.04	61.86	26.61	69.64	27.65
YKL133C	0.92	1.48	1.61	1.45	1.72	1.85	1.89	9.13	1.58	51.78	26.09	60.92	27.67
YDL226C	0.89	1.32	1.48	1.58	1.68	1.99	2.00	11.33	1.40	61.55	26.35	72.87	27.75
YPR127W	0.95	1.33	1.43	1.58	1.68	1.76	1.85	7.26	1.43	58.01	26.32	65.28	27.75
YAR029W	0.89	1.39	1.54	1.47	1.76	1.97	1.96	6.88	2.05	36.71	25.71	43.60	27.75
YNL194C	0.88	1.23	1.35	1.43	1.54	1.78	1.75	10.90	1.45	56.37	26.32	67.28	27.77
YKL221W	0.91	1.40	1.55	1.61	1.75	2.02	1.95	9.42	1.60	52.55	26.20	61.96	27.80
YIL016W	0.92	1.39	1.50	1.55	1.68	1.96	1.88	7.88	2.89	51.57	24.97	59.45	27.86
YDL144C	0.92	1.43	1.56	1.68	1.80	2.03	2.06	6.43	1.12	55.67	26.76	62.09	27.88
YEL048C	0.92	1.36	1.51	1.59	1.72	1.92	1.88	22.06	4.67	28.17	23.22	50.23	27.89
YFL053W	0.95	1.48	1.62	1.66	1.77	2.05	1.98	9.04	1.36	56.47	26.53	65.50	27.89
YKL218C	1.00	1.56	1.70	1.74	1.88	2.11	2.06	9.95	1.80	51.63	26.12	61.58	27.92
YBL027W	0.86	1.32	1.46	1.49	1.70	1.89	1.86	9.65	1.50	54.58	26.44	64.22	27.94
YDR477W	0.87	1.35	1.53	1.61	1.71	1.99	1.93	7.92	1.14	55.32	26.80	63.23	27.95
YLR031W	0.91	1.29	1.45	1.54	1.67	1.86	1.84	9.64	1.50	48.57	26.47	58.21	27.97
YPR023C	0.86	1.22	1.30	1.48	1.58	1.67	1.88	7.17	1.15	52.50	26.82	59.67	27.97
YNL022C	0.84	1.23	1.32	1.37	1.42	1.77	1.66	8.84	2.38	44.08	25.59	52.92	27.97
YGL129C	0.91	1.45	1.59	1.61	1.70	1.97	1.90	7.72	1.99	52.94	25.98	60.65	27.97
YHR159W	0.91	1.34	1.49	1.53	1.65	1.93	1.85	6.91	2.30	51.40	25.73	58.31	28.03
YMR313C	0.91	1.37	1.53	1.64	1.74	2.00	1.97	7.99	1.92	44.12	26.15	52.11	28.06
YKL068W	0.83	1.01	1.16	1.26	1.33	1.59	1.54	9.14	2.47	60.72	25.60	69.85	28.08
YBR271W	0.92	1.47	1.65	1.71	1.86	2.06	2.07	6.75	1.15	50.24	26.99	57.00	28.14
YPL017C	0.94	1.42	1.53	1.67	1.79	1.93	1.96	8.41	1.15	48.55	27.02	56.96	28.18
YIR032C	0.89	1.48	1.62	1.65	1.76	2.02	1.98	6.00	1.73	48.57	26.45	54.56	28.18
YLL056W	0.94	1.43	1.61	1.67	1.73	2.02	1.90	7.31	1.16	60.52	27.04	67.83	28.19
YDR409W	0.87	1.13	1.31	1.40	1.51	1.80	1.77	11.59	1.12	62.55	27.11	74.14	28.23
YER054C	0.96	1.59	1.77	1.85	1.92	2.15	2.13	7.25	1.61	55.00	26.66	62.25	28.27
YPL162C	0.87	1.24	1.37	1.47	1.58	1.66	1.70	8.22	1.29	26.00	26.99	34.22	28.29
YGR076C	0.89	1.24	1.38	1.43	1.57	1.80	1.75	6.72	2.24	45.33	26.07	52.05	28.30
YPL244C	0.90	1.39	1.47	1.56	1.65	1.96	1.81	8.11	1.39	51.83	26.94	59.94	28.33
YBL037W	0.90	1.28	1.32	1.45	1.54	1.86	1.78	10.38	1.44	63.65	26.91	74.03	28.35
YIL020C	0.88	1.18	1.28	1.27	1.38	1.69	1.57	9.17	2.27	54.48	26.15	63.65	28.42
YDR462W	0.96	1.39	1.57	1.61	1.75	2.03	2.02	7.66	1.81	51.82	26.61	59.49	28.43
YIL043C	0.90	1.31	1.46	1.54	1.64	1.92	1.86	7.04	2.05	49.25	26.38	56.29	28.44
YOL042W	0.90	1.22	1.35	1.33	1.43	1.73	1.60	7.76	1.47	58.05	26.97	65.81	28.44
YMR259C	0.86	1.25	1.38	1.45	1.52	1.87	1.81	8.21	1.58	43.48	26.88	51.69	28.45
YLL014W	0.86	1.22	1.38	1.48	1.61	1.84	1.80	10.82	1.79	55.49	26.67	66.31	28.46
YPL206C	0.88	1.33	1.33	1.48	1.62	1.71	1.76	6.06	1.42	45.63	27.05	51.69	28.47
YIL042C	0.86	1.20	1.32	1.38	1.46	1.72	1.66	6.14	1.84	49.58	26.66	55.72	28.49
YHR154W	0.93	1.36	1.49	1.51	1.62	1.89	1.82	7.20	2.26	54.09	26.24	61.29	28.50
YBR293W	0.91	1.46	1.67	1.57	1.76	2.02	2.04	5.87	1.54	38.91	27.06	44.79	28.59
YDR540C	0.94	1.49	1.66	1.72	1.82	2.06	2.00	8.76	1.41	66.70	27.20	75.46	28.61
YLR121C	0.86	1.16	1.31	1.41	1.52	1.75	1.72	8.54	1.35	65.75	27.27	74.29	28.61
YGL219C	0.88	1.41	1.55	1.61	1.74	2.01	1.94	8.27	1.69	53.29	26.95	61.56	28.64
YOR300W	0.93	1.33	1.47	1.50	1.60	1.85	1.78	9.34	1.48	62.86	27.25	72.20	28.72
YHR176W	0.86	1.11	1.19	1.21	1.30	1.51	1.45	5.34	1.92	42.56	26.80	47.90	28.73
YOR201C	0.92	1.41	1.62	1.77	1.88	2.09	2.12	8.72	1.60	47.20	27.14	55.93	28.74
YLR152C	0.89	1.33	1.50	1.59	1.69	2.00	1.95	7.98	1.84	50.60	26.91	58.57	28.75
YLR219W	1.12	1.62	1.75	1.84	1.87	2.03	2.04	8.00	1.40	45.56	27.35	53.56	28.75
YPL221W	0.99	1.63	1.81	1.88	1.98	2.20	2.16	8.22	1.27	62.73	27.48	70.95	28.75
YGL020C	0.92	1.43	1.57	1.62	1.72	2.02	1.94	7.20	1.14	51.20	27.65	58.40	28.78
YMR095C	0.84	1.04	1.18	1.20	1.30	1.54	1.45	9.18	2.45	70.41	26.34	79.59	28.79
YJR079W	1.00	1.47	1.63	1.71	1.81	2.02	1.99	7.23	2.51	45.10	26.30	52.33	28.81
YKL026C	0.97	1.47	1.64	1.73	1.85	2.07	2.04	7.88	2.51	50.85	26.32	58.73	28.83
YKL033W-A	0.97	1.44	1.61	1.69	1.80	2.05	1.99	8.80	3.25	50.17	25.58	58.97	28.83
YLL053C	0.94	1.41	1.58	1.65	1.76	2.00	1.96	9.26	1.95	54.34	26.88	63.60	28.83
YMR214W	0.92	1.28	1.42	1.40	1.51	1.75	1.66	9.64	1.58	67.74	27.27	77.37	28.85
YGR292W	0.96	1.31	1.41	1.42	1.51	1.79	1.70	7.64	1.49	52.51	27.37	60.15	28.86
YLR003C	0.91	1.43	1.58	1.65	1.75	2.07	2.02	9.88	1.38	50.60	27.49	60.47	28.88
YIL119C	0.91	1.34	1.52	1.80	1.73	1.95	1.92	8.54	1.11	58.78	27.81	67.32	28.92
YGR038W	1.22	1.83	1.94	2.00	2.06	2.26	2.27	7.76	1.71	49.11	27.23	56.88	28.93
YHR198C	0.92	1.37	1.54	1.61	1.71	1.94	1.88	9.09	2.23	53.46	26.72	62.55	28.95
YBR187W	0.92	1.33	1.45	1.63	1.73	2.00	1.97	7.76	1.40	48.76	27.55	56.52	28.95
YCL034W	1.07	1.60	1.77	1.89	2.01	2.19	2.18	7.85	1.29	66.49	27.67	74.34	28.96
YPL222W	0.89	1.38	1.27	1.36	1.46	1.52	1.60	8.50	1.56	52.81	27.40	61.31	28.97
YKL215C	0.92	1.43	1.56	1.62	1.75	1.98	1.93	11.42	2.22	51.51	26.85	62.94	29.06
YIL001W	0.89	1.32	1.45	1.48	1.60	1.88	1.82	7.85	2.20	53.62	26.89	61.47	29.08
YML052W	0.89	1.30	1.44	1.44	1.58	1.81	1.73	7.34	1.56	64.89	27.54	72.23	29.11
YBR056W	0.92	1.29	1.43	1.57	1.67	2.01	2.00	11.23	1.87	65.44	27.26	76.67	29.13
YOR061W	0.90	1.27	1.46	1.53	1.66	1.91	1.86	9.89	1.51	71.64	27.63	81.53	29.13
YNL122C	0.83	1.20	1.26	1.29	1.35	1.70	1.61	6.76	2.38	40.75	26.76	47.51	29.14
YOR231W	0.91	1.33	1.48	1.50	1.56	1.88	1.75	12.13	1.45	73.92	27.73	86.05	29.18
YLR030W	0.91	1.32	1.51	1.60	1.68	1.97	1.94	10.19	1.55	50.81	27.64	61.00	29.19
YKL081W	1.03	1.53	1.70	1.80	1.93	2.11	2.11	8.00	2.42	57.25	26.80	65.25	29.22
YIR036C	0.91	1.46	1.61	1.65	1.79	2.05	2.06	9.57	2.13	51.82	27.10	61.39	29.23
YAR015W	0.86	1.18	1.30	1.29	1.47	1.65	1.61	8.97	2.18	40.17	27.05	49.14	29.24
YER030W	1.01	1.63	1.82	1.89	1.97	2.21	2.18	8.73	1.41	60.44	27.84	69.17	29.24
YPR147C	0.87	1.24	1.39	1.49	1.58	1.86	1.81	8.12	1.38	53.50	27.87	61.63	29.25
YGL246C	0.94	1.46	1.61	1.68	1.79	2.06	2.00	6.48	1.64	45.51	27.63	51.99	29.26
YBR280C	0.87	1.37	1.58	1.54	1.64	1.92	1.93	8.12	1.57	46.46	27.71	54.58	29.28
YOR062C	0.99	1.46	1.60	1.66	1.77	2.00	1.98	6.81	2.85	58.96	26.45	65.77	29.30
YFR044C	0.92	1.38	1.55	1.65	1.77	1.96	1.93	15.06	2.74	80.84	26.57	95.90	29.31
YBR285W	0.91	1.36	1.59	1.59	1.69	2.00	2.02	8.11	1.27	51.96	28.05	60.07	29.32
YPL208W	0.89	1.27	1.24	1.34	1.45	1.50	1.59	9.75	2.22	53.40	27.11	63.15	29.33
YOL100W	0.91	1.34	1.50	1.54	1.63	1.90	1.84	8.25	1.12	61.57	28.22	69.83	29.34
YPR027C	0.93	1.48	1.55	1.67	1.77	2.07	1.95	7.07	1.29	53.32	28.05	60.39	29.34
YPL148C	0.93	1.44	1.59	1.69	1.80	1.89	1.96	7.44	1.56	27.21	27.79	34.64	29.35
YPR120C	1.01	1.47	1.64	1.68	1.77	2.04	1.97	7.08	1.32	57.91	28.05	64.99	29.37
YFR045W	0.86	1.42	1.58	1.61	1.74	2.03	1.93	11.73	1.79	66.98	27.60	78.70	29.40
YJR061W	0.92	1.47	1.62	1.66	1.78	2.03	2.03	8.11	2.34	49.06	27.08	57.17	29.42
YPL109C	1.06	1.60	1.73	1.93	2.00	2.14	2.16	9.32	1.95	48.88	27.52	58.20	29.48
YPR121W	0.98	1.46	1.58	1.74	1.84	2.10	2.04	5.53	1.02	46.02	28.46	51.55	29.48
YCR020C	0.95	1.40	1.56	1.65	1.79	2.00	1.97	13.66	2.04	76.48	27.45	90.14	29.49
YGL227W	0.94	1.30	1.47	1.55	1.65	2.18	1.83	6.00	0.95	54.50	28.55	60.49	29.51
YBL043W	0.87	1.23	1.37	1.37	1.55	1.75	1.71	7.31	2.05	43.38	27.46	50.69	29.52
YNL057W	1.03	1.59	1.74	1.81	1.90	2.15	2.12	9.68	1.81	69.82	27.73	79.50	29.55
YGR233C	0.91	1.36	1.50	1.52	1.62	1.94	1.84	7.37	2.01	50.42	27.54	57.79	29.55
YJR154W	0.88	1.33	1.50	1.52	1.64	1.92	1.82	11.79	1.86	75.71	27.69	87.51	29.55
YMR155W	0.94	1.30	1.48	1.54	1.64	1.94	1.88	8.16	1.90	48.22	27.73	56.37	29.63
YLR207W	1.05	1.61	1.78	1.82	1.90	2.18	2.14	9.22	1.45	48.22	28.20	57.43	29.64
YIL096C	0.86	1.30	1.43	1.49	1.59	1.89	1.82	7.30	1.98	48.08	27.67	55.38	29.65
YKR089C	0.92	1.33	1.55	1.59	1.72	2.02	2.01	8.16	1.37	46.11	28.28	54.27	29.65
YNR002C	0.95	1.25	1.39	1.39	1.47	1.72	1.63	12.97	1.82	78.87	27.88	91.84	29.70
YMR310C	0.83	1.08	1.28	1.33	1.40	1.71	1.65	8.66	2.92	42.62	26.88	51.28	29.80
YBR016W	0.91	1.16	1.27	1.42	1.49	1.79	1.64	11.52	1.75	67.72	28.08	79.24	29.82
YHL032C	0.89	1.28	1.46	1.55	1.69	1.88	1.96	7.82	1.28	56.55	28.55	64.37	29.83
YIL005W	0.90	1.30	1.44	1.46	1.59	1.87	1.78	6.60	1.76	48.06	28.17	54.66	29.93
YGL263W	0.85	1.31	1.46	1.55	1.66	1.97	1.89	9.05	1.84	56.82	28.11	65.87	29.95
YPL097W	0.86	1.19	1.44	1.52	1.62	1.90	1.80	8.60	1.64	48.31	28.40	56.91	30.04
YFL010W-A	0.89	1.39	1.58	1.64	1.77	2.06	1.97	10.07	1.47	60.09	28.57	70.17	30.04
YEL039C	0.94	1.50	1.67	1.75	1.84	2.08	2.03	10.18	2.04	61.44	28.00	71.62	30.04
YPR062W	0.95	1.46	1.48	1.63	1.72	2.03	1.93	7.04	1.31	51.94	28.75	58.98	30.06
YKL094W	0.92	1.37	1.48	1.56	1.64	1.93	1.84	8.87	2.64	54.42	27.44	63.29	30.07
YPL202C	0.92	1.48	1.49	1.63	1.75	1.82	1.90	7.18	1.23	47.79	28.90	54.97	30.13
YBL005W	0.90	1.24	1.38	1.57	1.68	1.93	1.87	10.95	2.24	64.65	27.93	75.59	30.17
YLR072W	0.84	1.24	1.42	1.52	1.63	1.91	1.87	10.14	2.28	54.22	27.90	64.37	30.18
YPR106W	0.99	1.56	1.72	1.79	1.87	2.12	2.08	7.13	1.28	54.28	28.91	61.42	30.19

ORF name	OD at 600 nm at sampling time points (hours)							GLUCOSE		FRUCTOSE		TOTAL SUGARS	
	0 h	20 h	27 h	44 h	66 h	93 h	113 h	120 h	146 h	120 h	146 h	120 h	146 h
YJR140C	0.97	1.50	1.69	1.72	1.84	2.13	2.05	6.61	1.07	58.32	29.12	64.93	30.19
YIL050W	0.85	1.21	1.33	1.36	1.46	1.76	1.68	8.79	2.69	55.55	27.50	64.33	30.19
YKL188C	0.85	1.13	1.30	1.35	1.45	1.73	1.68	8.09	1.63	47.94	28.61	56.03	30.24
YKR100C	1.02	1.44	1.60	1.61	1.70	1.97	1.90	8.24	1.28	63.51	28.97	71.74	30.25
YPL001W	0.94	1.45	1.54	1.70	1.82	2.04	2.03	6.76	2.01	43.73	28.25	50.49	30.26
YOR252W	0.90	1.50	1.60	1.68	1.82	1.94	2.08	4.82	1.00	39.68	29.28	44.50	30.28
YER004W	0.97	1.52	1.68	1.78	1.94	2.09	2.08	16.13	2.95	26.32	27.33	42.44	30.28
YJR060W	0.98	1.39	1.54	1.54	1.63	1.91	1.80	7.10	1.16	59.68	29.12	66.78	30.28
YJR025C	1.00	1.61	1.82	1.84	1.95	2.13	2.14	6.41	2.41	49.60	27.90	56.01	30.31
YPL156C	0.88	1.20	1.30	1.35	1.44	1.51	1.57	8.84	1.88	24.49	28.43	33.33	30.31
YLR172C	1.03	1.61	1.79	1.89	1.94	2.11	2.15	8.50	1.48	46.46	28.84	54.97	30.32
YNL172C	0.85	1.20	1.34	1.44	1.59	1.80	1.77	11.19	1.65	62.93	28.69	74.12	30.35
YHR206W	0.88	1.23	1.33	1.66	1.76	1.78	1.76	9.96	1.92	60.98	28.43	70.95	30.35
YMR294W	0.85	1.20	1.30	1.33	1.38	1.71	1.61	8.03	2.29	44.24	28.08	52.27	30.37
YKL077W	0.89	1.23	1.39	1.45	1.56	1.83	1.76	9.39	2.82	54.20	27.58	63.59	30.40
YHR149C	0.96	1.40	1.65	1.78	1.72	1.98	1.98	7.69	1.55	56.93	28.87	64.62	30.42
YPL137C	0.85	1.30	1.39	1.44	1.53	1.62	1.71	7.49	1.47	32.10	28.96	39.59	30.43
YKR084C	0.89	1.41	1.56	1.55	1.72	1.97	1.97	12.23	2.23	55.80	28.22	68.04	30.46
YGL134W	0.91	1.45	1.60	1.65	1.77	2.05	1.97	9.31	1.68	59.27	28.78	68.59	30.46
YJR040W	0.94	1.38	1.50	1.53	1.63	1.89	1.82	7.58	2.17	51.43	28.30	59.01	30.47
YDL188C	0.94	1.27	1.46	1.48	1.53	1.81	1.73	11.98	1.81	62.96	28.69	74.94	30.50
YPR138C	0.99	1.43	1.53	1.61	1.68	1.97	1.92	10.34	1.65	60.01	28.87	70.35	30.52
YDL093W	0.89	1.45	1.62	1.73	1.84	2.05	2.08	8.02	1.38	56.58	29.16	64.61	30.54
YJL013C	0.90	1.43	1.59	1.59	1.70	1.97	1.97	9.48	2.91	50.15	27.69	59.63	30.60
YMR226C	0.98	1.55	1.68	1.76	1.86	1.94	2.11	8.97	2.18	52.60	28.43	61.58	30.61
YLR165C	1.03	1.63	1.80	1.90	1.99	2.19	2.18	8.98	1.42	49.31	29.19	58.29	30.61
YML053C	0.92	1.58	1.74	1.76	1.88	2.08	2.03	6.98	1.31	66.24	29.31	73.21	30.62
YJL110C	1.01	1.56	1.74	1.80	1.88	2.16	2.09	9.01	1.48	60.99	29.14	70.00	30.62
YKL091C	0.93	1.45	1.56	1.61	1.73	1.97	1.91	10.55	3.28	57.19	27.35	67.73	30.63
YKR005C	0.86	1.28	1.42	1.46	1.60	1.85	1.77	12.28	1.83	58.73	28.81	71.01	30.64
YHL022C	0.92	1.35	1.52	1.59	1.71	2.00	1.93	7.20	1.99	42.91	28.66	50.11	30.65
YPR011C	0.91	1.25	1.29	1.43	1.49	1.57	1.70	8.32	1.57	57.06	29.10	65.39	30.67
YOR292C	0.93	1.50	1.64	1.74	1.85	1.95	2.01	10.86	1.84	50.93	28.84	61.78	30.68
YPL263C	0.88	1.31	1.32	1.47	1.57	1.90	1.72	7.45	1.31	52.04	29.40	59.49	30.70
YGL108C	0.81	1.18	1.35	1.38	1.51	1.84	1.74	9.31	1.76	56.47	28.95	65.78	30.71
YKL093W	0.95	1.42	1.52	1.59	1.69	1.97	1.89	8.38	3.56	52.98	27.16	61.36	30.72
YGL230C	0.98	1.41	1.60	1.71	1.83	2.11	2.01	11.23	1.59	72.14	29.14	83.37	30.73
YJR069C	0.85	1.21	1.38	1.47	1.56	1.85	1.79	7.53	2.30	43.63	28.45	51.17	30.74
YJR134C	0.94	1.42	1.60	1.69	1.79	2.05	2.02	6.96	2.63	45.94	28.13	52.90	30.76
YDL078C	0.86	1.35	1.56	1.54	1.64	1.96	1.96	9.24	1.54	63.06	29.25	72.29	30.78
YGL232W	0.85	1.28	1.43	1.48	1.59	1.91	1.82	8.54	1.65	56.68	29.14	65.22	30.79
YIL123W	0.90	1.20	1.33	1.51	1.75	1.79	1.68	14.35	2.45	66.93	28.34	81.28	30.80
YAL036C	0.90	1.55	1.68	1.53	1.80	1.96	1.94	7.21	2.19	39.15	28.61	46.36	30.80
YDR165W	0.93	1.37	1.59	1.90	1.88	1.97	1.97	8.46	2.02	58.70	28.78	67.17	30.80
YNL309W	0.99	1.51	1.69	1.73	1.84	2.12	2.04	12.49	1.42	75.15	29.40	87.63	30.82
YNL031C	0.85	1.14	1.26	1.27	1.34	1.68	1.56	9.46	2.42	46.83	28.40	56.30	30.82
YLR270W	1.01	1.51	1.64	1.70	1.79	2.06	2.02	6.72	0.90	57.44	29.92	64.16	30.82
YJR108W	0.90	1.31	1.45	1.51	1.64	1.93	1.87	10.86	2.37	58.61	28.49	69.47	30.86
YLR251W	1.03	1.46	1.59	1.68	1.75	1.96	1.95	11.52	1.85	51.10	29.04	62.62	30.90
YDR470C	0.92	1.33	1.53	1.59	1.73	2.00	1.95	7.92	1.38	62.92	29.52	70.84	30.90
YBR287W	0.93	1.31	1.42	1.55	1.62	1.90	1.87	10.21	1.61	61.80	29.34	72.01	30.95
YPR084W	0.87	1.27	1.34	1.51	1.62	1.71	1.86	7.89	1.35	55.76	29.60	63.65	30.95
YMR201C	0.90	1.30	1.49	1.56	1.65	1.94	1.90	9.41	2.57	54.11	28.40	63.52	30.97
YOR383C	0.92	1.31	1.45	1.51	1.61	1.88	1.81	10.09	1.45	69.06	29.52	79.16	30.97
YKR034W	0.91	1.19	1.32	1.43	1.55	1.78	1.68	8.80	2.12	51.25	28.93	60.05	31.04
YDL177C	0.96	1.42	1.59	1.63	1.80	2.04	2.00	12.14	2.16	77.61	28.92	89.75	31.08
YPR148C	1.00	1.53	1.66	1.72	1.82	2.12	2.05	10.95	1.63	56.78	29.45	67.74	31.09
YIL128W	0.87	1.08	1.19	1.30	1.43	1.67	1.52	11.23	1.93	66.26	29.16	77.49	31.09
YKL061W	0.86	1.10	1.34	1.33	1.43	1.74	1.74	8.87	3.16	51.92	27.96	60.79	31.12
YAR027W	0.87	1.28	1.42	1.41	1.62	1.81	1.79	7.22	1.88	41.30	29.25	48.52	31.13
YKR020W	0.95	1.36	1.53	1.56	1.66	1.94	1.85	7.70	1.32	57.60	29.86	65.29	31.18
YPL268W	0.88	1.31	1.30	1.44	1.57	1.70	1.68	9.70	2.05	54.81	29.19	64.50	31.24
YHR199C	0.84	1.07	1.24	1.33	1.44	1.70	1.64	7.26	2.10	51.45	29.16	58.72	31.26
YIL067C	0.87	1.20	1.38	1.37	1.48	1.79	1.65	8.44	2.28	51.67	29.00	60.11	31.28
YPL100W	0.99	1.43	1.52	1.66	1.77	1.95	1.91	8.13	1.72	45.39	29.57	53.52	31.29
YMR252C	0.84	1.28	1.42	1.49	1.59	1.91	1.90	9.41	1.90	46.09	29.40	55.50	31.30
YHR179W	0.90	1.25	1.37	1.43	1.53	1.76	1.70	7.69	2.24	52.31	29.10	60.00	31.34
YJL134W	1.02	1.62	1.80	1.87	1.96	2.14	2.11	7.85	1.70	64.42	29.67	72.28	31.37
YDR536W	0.85	1.24	1.42	1.51	1.61	1.92	1.84	9.33	1.47	55.28	29.90	64.61	31.37
YJR119C	0.94	1.33	1.49	1.58	1.66	1.93	1.89	9.11	3.08	57.62	28.30	66.73	31.38
YHR160C	0.86	1.23	1.36	1.38	1.50	1.82	1.70	6.80	2.49	47.40	28.95	54.20	31.44
YMR216C	0.88	1.20	1.36	1.37	1.42	1.69	1.59	20.76	3.68	90.88	27.77	111.64	31.46
YBR298C	0.83	1.17	1.41	1.40	1.51	1.87	1.84	6.54	1.46	49.54	30.03	56.08	31.48
YBR177W	0.95	1.30	1.55	1.69	1.83	2.07	2.03	8.24	1.58	57.77	29.90	66.01	31.49
YGR052W	0.90	1.28	1.46	1.57	1.71	2.05	1.89	12.36	1.34	80.67	30.15	93.02	31.49
YDL176W	0.90	1.27	1.41	1.31	1.49	1.69	1.69	8.39	1.33	66.57	30.20	74.96	31.52
YDL201W	0.91	1.40	1.61	1.55	1.64	1.98	1.99	10.87	1.89	66.51	29.67	77.38	31.56
YFR010W	0.92	1.33	1.48	1.51	1.62	1.92	1.82	10.87	1.71	65.85	29.86	76.71	31.57
YDL082W	0.97	1.52	1.71	1.59	1.74	2.01	2.03	6.55	1.39	54.81	30.20	61.36	31.59
YHL006C	0.87	1.10	1.28	1.43	1.56	1.85	1.81	7.71	1.96	52.18	29.63	59.89	31.59
YDR405W	0.94	1.50	1.69	1.79	1.89	2.16	2.11	7.87	1.63	60.05	29.96	67.92	31.60
YGL066W	0.89	1.35	1.49	1.54	1.67	1.96	1.87	8.61	1.58	57.75	30.03	66.36	31.61
YBL007C	0.90	1.33	1.44	1.48	1.68	1.86	1.83	12.07	2.42	49.35	29.25	61.42	31.67
YDR494W	1.05	1.59	1.74	1.82	1.89	2.14	2.09	9.22	2.40	61.87	29.29	71.08	31.69
YDL086W	0.81	1.09	1.27	1.19	1.38	1.69	1.64	7.76	1.33	48.29	30.36	56.05	31.70
YOR136W	1.05	1.44	1.61	1.71	1.80	2.04	2.00	11.24	2.09	67.70	29.61	78.94	31.70
YGL032C	0.94	1.45	1.59	1.63	1.76	2.01	1.95	7.70	2.16	59.80	29.56	67.50	31.73
YPR006C	0.90	1.31	1.31	1.44	1.57	1.68	1.66	11.34	2.25	58.91	29.51	70.24	31.77
YLR228C	0.89	1.27	1.44	1.51	1.65	1.88	1.82	8.98	1.79	64.11	30.03	73.09	31.82
YER050C	0.91	1.43	1.63	1.71	1.80	2.08	2.03	7.37	1.36	55.24	30.47	62.60	31.83
YOR052C	0.98	1.42	1.57	1.61	1.73	1.95	1.90	10.66	1.77	69.96	30.07	80.62	31.84
YHR009C	0.93	1.26	1.44	1.51	1.59	1.83	1.79	9.90	1.82	64.19	30.04	74.09	31.86
YLR225C	0.98	1.44	1.56	1.62	1.69	1.94	1.89	9.24	1.76	50.19	30.13	59.43	31.89
YFR007W	0.88	1.36	1.52	1.55	1.67	1.97	1.88	8.93	1.84	56.82	30.07	65.75	31.91
YMR271C	0.98	1.50	1.64	1.65	1.73	2.01	1.92	7.34	1.64	50.40	30.30	57.74	31.94
YER185W	0.88	1.36	1.53	1.55	1.67	2.01	1.91	8.57	1.62	54.81	30.34	63.38	31.97
YFL020C	0.92	1.34	1.50	1.58	1.70	1.91	1.88	14.97	1.73	81.47	30.26	96.43	31.99
YAL007C	0.88	1.15	1.24	1.24	1.39	1.56	1.51	12.08	2.25	47.40	29.75	59.48	32.00
YOR255W	0.91	1.42	1.58	1.68	1.78	1.88	2.03	10.33	2.54	45.53	29.48	55.86	32.02
YKL050C	0.93	1.32	1.55	1.58	1.66	1.95	1.98	8.61	2.72	52.51	29.35	61.11	32.08
YFL044C	0.94	1.42	1.57	1.70	1.80	1.99	1.96	18.77	2.31	91.86	29.77	110.63	32.09
YJR080C	0.96	1.43	1.60	1.69	1.82	2.03	2.00	8.06	2.57	47.71	29.54	55.77	32.11
YDL076C	0.91	1.40	1.59	1.58	1.67	1.95	1.99	10.82	1.97	59.66	30.15	70.48	32.13
YGL009C	0.88	1.38	1.54	1.61	1.75	2.01	1.94	7.28	1.56	53.01	30.58	60.30	32.14
YML105W	0.83	1.13	1.30	1.37	1.50	1.74	1.68	10.65	2.05	70.84	30.11	81.49	32.16
YLR328W	1.01	1.57	1.70	1.79	1.88	2.05	2.09	12.10	2.50	50.44	29.66	62.54	32.16
YOR285W	0.92	1.34	1.39	1.54	1.65	1.73	1.80	8.25	2.14	46.52	30.04	54.77	32.18
YIL064W	0.86	1.24	1.36	1.41	1.53	1.80	1.72	8.71	3.44	56.23	28.74	64.94	32.18
YBR205W	0.95	1.42	1.59	1.63	1.71	2.02	1.97	7.22	1.51	53.29	30.68	60.50	32.19
YLR004C	0.89	1.41	1.59	1.60	1.73	2.03	2.03	11.13	2.19	61.65	30.01	72.78	32.20
YMR285C	0.82	1.27	1.38	1.44	1.53	1.83	1.75	8.50	2.81	43.22	29.40	51.73	32.20
YPL040C	0.92	1.29	1.61	1.72	1.84	2.00	2.01	8.67	2.06	54.96	30.16	63.63	32.22
YKR052C	0.88	1.30	1.43	1.48	1.64	1.89	1.83	10.90	1.98	55.33	30.25	66.23	32.22
YLR220W	1.09	1.63	1.80	1.95	2.02	2.18	2.21	9.24	1.72	58.24	30.54	67.49	32.25
YLR181C	0.98	1.23	1.36	1.41	1.47	1.75	1.69	11.95	1.60	56.58	30.66	68.53	32.26
YDL114W	0.93	1.48	1.65	1.54	1.72	1.97	1.99	10.23	1.45	62.18	30.83	72.41	32.28
YNL074C	0.94	1.26	1.42	1.44	1.51	1.83	1.73	10.96	1.94	72.38	30.34	83.34	32.28
YAL044C	0.92	1.35	1.47	1.52	1.71	1.87	1.86	10.31	2.75	50.30	29.57	60.61	32.32
YFR017C	0.87	1.34	1.51	1.56	1.68	1.97	1.89	9.92	2.08	66.06	30.26	75.98	32.34
YNL053W	0.94	1.45	1.61	1.67	1.78	2.06	1.99	7.69	1.68	61.93	30.68	69.62	32.36
YNL234W	0.91	1.21	1.29	1.33	1.46	1.68	1.62	10.24	2.22	53.35	30.16	63.59	32.37
YOL028C	0.97	1.48	1.65	1.67	1.77	2.06	1.97	10.16	1.74	72.77	30.64	82.92	32.38
YML076C	0.87	1.11	1.25	1.26	1.38	1.63	1.52	9.20	2.31	63.80	30.07	72.99	32.38
YJL206C	0.93	1.34	1.54	1.57	1.68	2.01	1.88	7.30	1.46	59.59	30.93	66.88	32.39
YDR254W	0.82	1.15	1.36	1.25	1.40	1.73	1.71	6.20	1.03	55.39	31.38	61.60	32.40
YPR067W	0.92	1.38	1.43	1.58	1.67	1.75	1.83	7.74	1.72	54.09	30.68	61.83	32.41
YDL156W	0.91	1.39	1.60	1.61	1.72	1.99	2.02	7.87	1.52	58.55	30.91	66.42	32.43
YIL111W	0.88	1.17	1.32	1.39	1.45	1.69	1.65	8.61	2.39	53.44	30.05	62.06	32.44
YKL107W	0.91	1.28	1.52	1.57	1.70	1.96	1.99	8.80	2.77	57.62	29.67	66.42	32.44
YFL007W	0.89	1.40	1.58	1.64	1.77	2.05	1.97	9.79	1.71	57.91	30.74	67.70	32.46
YGL084C	0.85	1.32	1.47	1.51	1.63	1.94	1.84	8.46	2.32	56.41	30.13	64.87	32.46
YMR173W	0.92	1.34	1.51	1.54	1.63	1.94	1.84	7.61	1.91	62.74	30.58	70.35	32.49
YGR210C	0.95	1.46	1.62	1.68	1.79	2.06	1.99	8.76	2.32	48.28	30.18	57.03	32.50
YLR012C	0.85	1.20	1.38	1.47	1.54	1.84	1.80	9.77	1.85	55.02	30.66	64.79	32.50
YIL113W	0.84	1.08	1.30	1.35	1.44	1.71	1.58	11.04	2.15	65.14	30.36	76.17	32.51

ORF name	OD at 600 nm at sampling time points (hours)							GLUCOSE		FRUCTOSE		TOTAL SUGARS	
	0 h	20 h	27 h	44 h	66 h	93 h	113 h	120 h	146 h	120 h	146 h	120 h	146 h
YHR102W	0.89	1.34	1.54	1.72	1.83	2.04	1.99	**10.10**	**2.36**	**58.22**	**30.16**	**68.32**	**32.52**
YKR055W	0.93	1.35	1.54	1.56	1.65	1.97	1.84	**7.66**	**1.15**	**64.25**	**31.38**	**71.91**	**32.53**
YMR258C	0.87	1.26	1.40	1.43	1.50	1.86	1.81	**8.53**	**2.22**	**42.87**	**30.30**	**51.40**	**32.53**
YPL168W	0.90	1.36	1.41	1.51	1.60	1.69	1.77	**9.22**	**1.91**	**42.81**	**30.63**	**52.04**	**32.53**
YHR214W-A	0.90	1.24	1.42	1.53	1.64	1.94	1.84	**6.85**	**1.04**	**60.68**	**31.50**	**67.53**	**32.54**
YIL018W	0.92	1.25	1.51	1.72	1.73	1.79	1.68	**12.88**	**2.44**	**68.26**	**30.13**	**81.14**	**32.57**
YBR103W	0.92	1.27	1.42	1.57	1.67	1.94	1.84	**12.07**	**2.20**	**65.08**	**30.39**	**77.16**	**32.59**
YNL070W	0.94	1.42	1.60	1.70	1.75	2.03	1.98	**10.49**	**2.00**	**59.94**	**30.60**	**70.42**	**32.59**
YAL013W	0.90	1.34	1.49	1.52	1.71	1.90	1.89	**11.52**	**2.29**	**54.99**	**30.30**	**66.50**	**32.60**
YLR073C	0.86	1.18	1.39	1.48	1.57	1.86	1.82	**9.44**	**1.77**	**57.77**	**30.83**	**67.22**	**32.60**
YPR079W	1.06	1.61	1.77	1.87	1.96	2.13	2.14	**7.09**	**1.46**	**56.39**	**31.17**	**63.48**	**32.63**
YLR032W	0.91	1.32	1.43	1.48	1.57	1.90	1.79	**9.04**	**1.82**	**54.18**	**30.83**	**63.22**	**32.65**
YLR281C	1.04	1.67	1.82	1.89	1.99	2.17	2.18	**8.80**	**1.95**	**49.35**	**30.71**	**58.15**	**32.66**
YNL041C	0.82	1.11	1.30	1.35	1.44	1.76	1.70	**8.34**	**2.78**	**50.52**	**29.89**	**58.86**	**32.67**
YKL214C	0.92	1.38	1.52	1.58	1.69	1.99	1.92	**10.03**	**2.47**	**56.04**	**30.22**	**66.07**	**32.69**
YPL008W	0.95	1.44	1.50	1.65	1.74	1.93	1.94	**8.70**	**2.06**	**49.95**	**30.63**	**58.65**	**32.69**
YPR179C	0.91	1.33	1.43	1.47	1.56	1.86	1.79	**8.26**	**1.80**	**55.86**	**30.95**	**64.12**	**32.75**
YMR273C	0.92	1.34	1.50	1.51	1.61	1.94	1.81	**9.51**	**2.11**	**68.17**	**30.64**	**77.68**	**32.75**
YKL140W	0.93	1.50	1.64	1.70	1.82	2.07	2.04	**8.29**	**1.19**	**58.55**	**31.56**	**66.84**	**32.76**
YHR163W	0.92	1.35	1.51	1.56	1.68	1.93	1.87	**7.36**	**2.29**	**55.51**	**30.51**	**62.87**	**32.80**
YLL056C	0.92	1.37	1.55	1.65	1.77	1.99	1.98	**11.36**	**2.15**	**56.89**	**30.66**	**68.26**	**32.81**
YDL088C	0.82	1.22	1.42	1.29	1.42	1.74	1.70	**6.66**	**1.41**	**43.97**	**31.40**	**50.63**	**32.81**
YLR011W	0.83	1.15	1.30	1.37	1.48	1.77	1.70	**11.11**	**2.20**	**56.43**	**30.63**	**67.54**	**32.83**
YJR130C	0.91	1.46	1.63	1.65	1.79	2.02	2.07	**9.16**	**2.42**	**49.13**	**30.41**	**58.30**	**32.83**
YGL222C	0.90	1.34	1.48	1.53	1.65	1.94	1.85	**8.79**	**1.90**	**56.68**	**30.93**	**65.47**	**32.83**
YKL174C	0.91	1.43	1.60	1.69	1.81	2.09	2.05	**9.82**	**1.54**	**51.71**	**31.30**	**61.53**	**32.84**
YMR215W	0.86	1.33	1.51	1.54	1.70	1.93	1.86	**10.32**	**2.14**	**67.66**	**30.72**	**77.98**	**32.86**
YHR039C-A	0.86	1.18	1.35	1.51	1.61	1.95	1.90	**11.79**	**1.98**	**59.86**	**30.89**	**71.65**	**32.87**
YLR028C	0.93	1.39	1.59	1.59	1.67	1.98	1.96	**10.96**	**2.49**	**58.47**	**30.39**	**69.43**	**32.88**
YER041W	0.99	1.60	1.77	1.87	1.94	2.17	2.14	**10.72**	**2.31**	**70.21**	**30.62**	**80.93**	**32.93**
YDL099W	0.88	1.41	1.62	1.61	1.72	1.97	1.99	**9.83**	**1.77**	**59.29**	**31.17**	**69.13**	**32.94**
YHR031C	0.93	1.32	1.45	1.62	1.72	1.96	1.95	**13.35**	**2.67**	**66.24**	**30.27**	**79.58**	**32.94**
YFR009W	0.88	1.40	1.57	1.62	1.74	1.99	1.93	**9.63**	**2.03**	**56.54**	**30.91**	**66.17**	**32.94**
YMR174C	1.04	1.56	1.68	1.76	1.81	1.92	2.07	**8.32**	**2.06**	**44.94**	**30.92**	**53.26**	**32.98**
YLR253W	1.05	1.59	1.75	1.87	1.97	2.17	2.17	**9.12**	**2.64**	**49.84**	**30.36**	**58.96**	**33.00**
YBR290W	0.90	1.34	1.58	1.49	1.59	1.91	1.94	**5.37**	**1.77**	**34.49**	**31.25**	**39.86**	**33.02**
YKL220C	0.96	1.49	1.59	1.70	1.83	2.02	1.93	**8.71**	**2.52**	**67.42**	**30.51**	**76.13**	**33.02**
YPR015C	0.95	1.60	1.77	1.78	1.87	2.14	2.06	**8.97**	**1.34**	**67.62**	**31.69**	**76.59**	**33.03**
YPR134W	0.91	1.36	1.49	1.60	1.68	1.96	1.90	**12.05**	**1.33**	**69.98**	**31.71**	**82.03**	**33.04**
YPL236C	1.12	1.83	1.97	2.04	2.14	2.30	2.30	**9.70**	**1.56**	**64.03**	**31.54**	**73.74**	**33.10**
YGL257C	0.91	1.39	1.52	1.59	1.71	1.97	1.91	**7.94**	**1.85**	**54.42**	**31.27**	**62.35**	**33.12**
YLL001W	0.87	1.26	1.39	1.46	1.55	1.88	1.79	**8.83**	**1.87**	**45.02**	**31.27**	**53.85**	**33.14**
YDL100C	0.91	1.38	1.59	1.58	1.70	1.95	1.97	**10.20**	**1.98**	**58.88**	**31.19**	**69.09**	**33.16**
YNL230C	0.92	1.35	1.55	1.63	1.70	1.81	1.98	**8.81**	**2.21**	**43.61**	**30.98**	**52.43**	**33.19**
YIL045W	0.84	1.18	1.29	1.29	1.36	1.70	1.57	**8.02**	**2.34**	**53.48**	**30.85**	**61.50**	**33.19**
YLR319C	1.01	1.44	1.55	1.59	1.65	1.90	1.90	**11.52**	**2.40**	**63.23**	**30.83**	**74.75**	**33.23**
YER153C	0.95	1.46	1.63	1.77	1.89	2.06	2.04	**16.93**	**3.84**	**83.98**	**29.40**	**100.91**	**33.23**
YLR070C	0.87	1.43	1.65	1.67	1.78	2.09	2.09	**9.97**	**2.40**	**52.16**	**30.86**	**62.13**	**33.26**
YDR313C	0.81	1.04	1.19	1.20	1.31	1.62	1.54	**8.71**	**1.52**	**60.91**	**31.80**	**69.62**	**33.32**
YPL147W	0.91	1.35	1.46	1.50	1.60	1.67	1.73	**7.93**	**2.30**	**26.49**	**31.04**	**34.42**	**33.34**
YLR084C	0.88	1.41	1.60	1.70	1.82	2.02	1.99	**7.85**	**2.14**	**60.37**	**31.21**	**68.22**	**33.35**
YHR100C	1.00	1.52	1.67	1.86	1.96	2.15	2.21	**13.97**	**2.47**	**68.90**	**30.89**	**82.88**	**33.36**
YKL166C	0.90	1.45	1.62	1.68	1.76	2.06	1.97	**12.44**	**1.83**	**57.25**	**31.53**	**69.68**	**33.36**
YKR078W	0.91	1.42	1.54	1.61	1.73	1.98	1.94	**12.10**	**2.28**	**60.87**	**31.09**	**72.98**	**33.38**
YHR079C-A	0.89	1.14	1.28	1.46	1.56	1.86	1.81	**14.60**	**2.59**	**66.55**	**30.80**	**81.15**	**33.39**
YAR033W	0.92	1.39	1.53	1.52	1.73	1.91	1.87	**9.76**	**2.21**	**47.84**	**31.21**	**57.60**	**33.42**
YKL161C	0.90	1.31	1.39	1.67	1.62	1.82	1.79	**9.86**	**2.04**	**62.96**	**31.39**	**72.82**	**33.43**
YMR269W	0.88	1.29	1.48	1.56	1.65	1.99	1.99	**7.39**	**3.15**	**39.77**	**30.30**	**47.17**	**33.46**
YLR285C-A	1.05	1.62	1.75	1.76	1.83	1.99	2.03	**10.03**	**2.32**	**48.68**	**31.15**	**58.72**	**33.48**
YNR063W	0.92	1.27	1.44	1.49	1.60	1.86	1.79	**10.88**	**1.74**	**68.26**	**31.76**	**79.15**	**33.50**
YPL229W	0.88	1.20	1.21	1.27	1.32	1.38	1.44	**10.43**	**2.32**	**57.14**	**31.21**	**67.57**	**33.53**
YLR174W	1.00	1.60	1.75	1.84	1.92	2.15	2.12	**9.00**	**1.60**	**47.69**	**31.94**	**56.69**	**33.54**
YBR258C	1.10	1.57	1.71	1.78	1.88	2.11	2.09	**8.13**	**1.50**	**66.08**	**32.05**	**74.21**	**33.55**
YDR469W	0.98	1.41	1.59	1.65	1.77	2.05	1.97	**10.31**	**2.26**	**58.61**	**31.31**	**68.92**	**33.58**
YGR051C	0.92	1.38	1.55	1.65	1.79	2.14	1.96	**8.06**	**1.61**	**72.34**	**31.99**	**80.40**	**33.60**
YDL203C	0.94	1.41	1.57	1.57	1.70	1.99	1.96	**8.11**	**1.88**	**56.02**	**31.73**	**64.12**	**33.61**
YPL223C	0.89	1.26	1.27	1.40	1.48	1.55	1.62	**10.64**	**2.43**	**59.45**	**31.18**	**70.09**	**33.61**
YGL131C	0.90	1.28	1.47	1.51	1.63	1.94	1.86	**11.62**	**1.67**	**76.14**	**31.94**	**87.76**	**33.62**
YDL168W	0.94	1.50	1.68	1.58	1.75	1.99	2.01	**10.16**	**1.95**	**65.71**	**31.67**	**75.87**	**33.62**
YJR030C	1.02	1.53	1.72	1.74	1.81	2.12	1.98	**9.94**	**1.94**	**73.14**	**31.71**	**83.08**	**33.65**
YDR034C	0.98	1.41	1.55	1.63	1.76	1.98	1.94	**14.33**	**2.23**	**77.92**	**31.45**	**92.26**	**33.68**
YGL226W	0.89	1.41	1.52	1.56	1.68	1.94	1.88	**10.59**	**2.06**	**62.78**	**31.63**	**73.38**	**33.69**
YNL052W	0.99	1.49	1.61	1.65	1.74	2.01	1.97	**12.40**	**2.20**	**71.29**	**31.50**	**83.68**	**33.70**
YKR046C	0.90	1.22	1.38	1.59	1.74	1.94	1.88	**10.10**	**2.06**	**64.39**	**31.65**	**74.49**	**33.71**
YPL258C	0.96	1.46	1.47	1.62	1.73	1.82	1.89	**8.55**	**2.31**	**57.75**	**31.42**	**66.30**	**33.72**
YPR191W	0.93	1.37	1.46	1.48	1.58	1.88	1.80	**9.11**	**1.77**	**55.35**	**31.97**	**64.45**	**33.74**
YML022W	0.93	1.35	1.51	1.53	1.62	1.92	1.83	**6.83**	**1.43**	**54.69**	**32.32**	**61.52**	**33.75**
YPL099C	0.92	1.25	1.34	1.48	1.56	1.80	1.78	**8.58**	**2.35**	**48.96**	**31.42**	**57.54**	**33.76**
YBR047W	0.97	1.36	1.49	1.67	1.76	2.06	2.05	**11.02**	**1.76**	**63.14**	**32.00**	**74.16**	**33.76**
YAL030W	0.90	1.40	1.52	1.43	1.66	1.82	1.75	**12.65**	**2.99**	**56.27**	**30.80**	**68.92**	**33.79**
YOR344C	0.92	1.26	1.41	1.43	1.52	1.79	1.70	**10.18**	**2.23**	**69.55**	**31.57**	**79.73**	**33.79**
YKL007W	0.87	1.20	1.37	1.39	1.50	1.82	1.78	**10.49**	**3.17**	**60.74**	**30.68**	**71.23**	**33.85**
YLR227C	0.96	1.44	1.57	1.59	1.64	1.94	1.85	**10.64**	**1.89**	**52.16**	**31.97**	**62.80**	**33.87**
YAL014C	0.87	1.24	1.39	1.40	1.60	1.78	1.73	**12.30**	**2.62**	**60.27**	**31.27**	**72.57**	**33.89**
YMR283C	0.86	1.30	1.39	1.45	1.54	1.86	1.79	**7.96**	**2.43**	**46.03**	**31.48**	**54.00**	**33.91**
YJR135W-A	0.94	1.36	1.54	1.60	1.71	1.96	1.90	**8.86**	**3.67**	**54.40**	**30.24**	**63.26**	**33.91**
YGL210W	0.89	1.36	1.49	1.52	1.63	1.92	1.86	**9.64**	**2.18**	**56.74**	**31.73**	**66.37**	**33.92**
YOR197W	0.92	1.41	1.58	1.70	1.81	1.90	2.05	**10.56**	**2.38**	**47.20**	**31.59**	**57.76**	**33.98**
YNL200C	0.75	0.97	1.05	1.16	1.21	1.39	1.37	**8.24**	**2.78**	**47.57**	**31.21**	**55.81**	**33.99**
YGR220C	0.84	1.16	1.39	1.43	1.52	1.83	1.66	**10.22**	**2.32**	**64.88**	**31.68**	**75.10**	**34.00**
YDR493W	0.97	1.48	1.66	1.73	1.82	2.08	2.03	**9.57**	**2.26**	**59.10**	**31.76**	**68.67**	**34.02**
YER051W	0.91	1.47	1.66	1.74	1.84	2.10	2.05	**9.20**	**2.05**	**60.91**	**31.99**	**70.11**	**34.04**
YPL096W	0.87	1.17	1.43	1.50	1.60	1.83	1.75	**9.41**	**2.98**	**49.80**	**31.07**	**59.21**	**34.04**
YPL257W	0.93	1.36	1.35	1.49	1.60	1.70	1.72	**9.33**	**3.05**	**56.91**	**31.01**	**66.24**	**34.06**
YDL154W	0.88	1.33	1.51	1.55	1.64	1.96	1.99	**7.68**	**1.88**	**55.22**	**32.20**	**62.90**	**34.07**
YNL139C	0.63	0.83	0.90	0.98	1.04	1.23	1.20	**9.25**	**3.14**	**48.18**	**30.95**	**57.43**	**34.09**
YHR050W	0.91	1.27	1.45	1.64	1.74	2.06	2.00	**14.12**	**2.60**	**69.80**	**31.50**	**83.92**	**34.10**
YOL070C	0.90	1.24	1.40	1.41	1.53	1.82	1.71	**12.42**	**2.40**	**69.51**	**31.76**	**81.94**	**34.15**
YPL187W	0.97	1.29	1.47	1.49	1.60	1.89	1.78	**10.22**	**1.86**	**65.05**	**32.30**	**75.26**	**34.17**
YGR255C	0.95	1.35	1.51	1.58	1.78	1.98	1.92	**9.83**	**2.56**	**62.03**	**31.62**	**71.86**	**34.18**
YMR272W-B	0.88	1.29	1.48	1.56	1.66	1.94	1.91	**8.60**	**3.24**	**43.40**	**30.95**	**52.00**	**34.19**
YBR162W-A	1.06	1.75	1.90	1.96	2.06	2.23	2.22	**9.08**	**1.56**	**62.43**	**32.64**	**71.51**	**34.20**
YOR237W	0.96	1.35	1.49	1.55	1.64	1.72	1.87	**9.81**	**2.59**	**46.46**	**31.62**	**56.28**	**34.21**
YPL095C	0.88	1.38	1.61	1.77	1.85	2.02	1.99	**8.50**	**1.72**	**48.08**	**32.53**	**56.58**	**34.25**
YBR212W	1.00	1.52	1.68	1.73	1.83	2.11	2.06	**6.89**	**1.39**	**54.50**	**32.87**	**61.38**	**34.26**
YMR289W	0.88	1.24	1.34	1.38	1.44	1.77	1.67	**8.93**	**2.42**	**48.63**	**31.86**	**57.56**	**34.28**
YPL015C	0.92	1.39	1.50	1.68	1.78	1.89	1.95	**9.09**	**2.95**	**42.78**	**31.33**	**51.86**	**34.28**
YFR011C	0.89	1.52	1.68	1.70	1.80	2.06	1.98	**9.30**	**2.09**	**66.92**	**32.20**	**76.22**	**34.28**
YDL200C	0.89	1.45	1.64	1.54	1.68	1.96	1.99	**9.21**	**2.60**	**53.97**	**31.69**	**63.18**	**34.29**
YOR251C	0.91	1.49	1.64	1.68	1.81	1.90	2.05	**9.42**	**2.78**	**48.28**	**31.56**	**57.69**	**34.34**
YHR104W	0.92	1.20	1.37	1.54	1.64	1.97	1.96	**13.23**	**3.38**	**63.80**	**30.98**	**77.03**	**34.35**
YML027W	0.89	1.31	1.48	1.48	1.62	1.92	1.81	**8.29**	**1.99**	**62.32**	**32.37**	**70.61**	**34.36**
YMR025W	0.86	1.02	1.12	1.14	1.21	1.42	1.35	**8.35**	**1.67**	**62.76**	**32.70**	**71.11**	**34.38**
YGL031C	0.91	1.48	1.66	1.73	1.85	2.10	2.04	**8.26**	**1.94**	**55.61**	**32.45**	**63.87**	**34.39**
YER039C	1.01	1.70	1.86	1.94	2.02	2.24	2.21	**9.52**	**2.28**	**62.65**	**32.11**	**72.17**	**34.39**
YEL017W	0.92	1.47	1.66	1.76	1.86	2.09	2.06	**8.66**	**1.92**	**56.56**	**32.47**	**65.22**	**34.40**
YKL105C	1.04	1.66	1.82	1.87	1.96	2.18	2.15	**9.49**	**1.62**	**72.36**	**32.79**	**81.85**	**34.41**
YOR279C	0.85	1.28	1.36	1.47	1.58	1.69	1.74	**9.94**	**2.79**	**42.93**	**31.62**	**52.88**	**34.41**
YOL014W	0.98	1.52	1.69	1.76	1.87	2.08	2.05	**10.13**	**1.82**	**67.19**	**32.60**	**77.32**	**34.42**
YOR280C	0.97	1.47	1.63	1.68	1.79	2.07	1.99	**10.49**	**1.84**	**67.11**	**32.60**	**77.60**	**34.43**
YPR042C	0.91	1.54	1.68	1.56	1.85	1.98	2.03	**8.55**	**2.90**	**40.69**	**31.53**	**49.23**	**34.43**
YFR030W	0.83	1.27	1.44	1.50	1.63	1.92	1.83	**8.90**	**1.90**	**54.91**	**32.53**	**63.81**	**34.44**
YNL044W	0.84	1.13	1.27	1.31	1.42	1.65	1.58	**9.26**	**2.01**	**61.81**	**32.43**	**71.07**	**34.44**
YGL017W	0.83	1.19	1.35	1.41	1.51	1.85	1.74	**8.77**	**1.76**	**61.59**	**32.68**	**70.37**	**34.44**
YJR035W	0.88	1.20	1.36	1.44	1.65	1.81	1.80	**8.92**	**3.38**	**44.45**	**31.07**	**53.37**	**34.45**
YMR302C	0.88	1.28	1.43	1.49	1.59	1.91	1.83	**9.05**	**2.95**	**53.85**	**31.50**	**62.90**	**34.46**
YAR073W	0.85	1.23	1.32	1.29	1.50	1.68	1.61	**12.23**	**2.73**	**51.99**	**31.74**	**64.22**	**34.47**
YFR008W	0.92	1.32	1.48	1.55	1.72	1.88	1.86	**9.95**	**2.01**	**70.35**	**32.49**	**80.30**	**34.50**
YKL159C	0.93	1.40	1.53	1.80	1.96	1.98	1.97	**8.17**	**1.62**	**60.47**	**32.88**	**68.64**	**34.50**
YDR444W	0.96	1.56	1.76	1.83	1.91	2.18	2.17	**9.94**	**2.13**	**60.19**	**32.39**	**70.13**	**34.52**
YEL018W	0.93	1.48	1.68	1.76	1.88	2.13	2.08	**8.53**	**1.83**	**57.19**	**32.70**	**65.72**	**34.53**
YPL194W	0.85	1.18	1.28	1.39	1.51	1.59	1.67	**9.78**	**2.51**	**26.49**	**32.03**	**36.27**	**34.54**
YOL132W	0.88	1.28	1.46	1.50	1.62	1.92	1.81	**8.81**	**2.33**	**57.99**	**32.22**	**66.79**	**34.55**
YPL186C	0.93	1.40	1.46	1.51	1.59	1.66	1.74	**10.89**	**2.65**	**33.95**	**31.91**	**44.83**	**34.57**
YNL208W	0.77	1.12	1.19	1.24	1.29	1.61	1.52	**7.65**	**2.52**	**46.36**	**32.06**	**54.01**	**34.58**

ORF name	OD at 600 nm at sampling time points (hours)							GLUCOSE		FRUCTOSE		TOTAL SUGARS	
	0 h	20 h	27 h	44 h	66 h	93 h	113 h	120 h	146 h	120 h	146 h	120 h	146 h
YOR286W	0.86	1.29	1.36	1.52	1.63	1.76	1.78	**10.36**	**2.87**	**49.37**	**31.71**	**59.73**	**34.58**
YMR262W	0.88	1.19	1.33	1.38	1.47	1.76	1.70	**10.61**	**2.75**	**47.63**	**31.83**	**58.24**	**34.58**
YGL026C	0.93	1.44	1.59	1.63	1.74	2.02	1.94	**10.05**	**2.07**	**62.32**	**32.51**	**72.36**	**34.59**
YOR127W	0.97	1.40	1.54	1.54	1.65	1.94	1.82	**11.00**	**2.53**	**60.50**	**32.07**	**71.50**	**34.60**
YLL023C	1.02	1.50	1.65	1.72	1.78	2.00	1.96	**9.13**	**3.34**	**74.45**	**31.27**	**83.57**	**34.61**
YGL242C	0.81	1.22	1.37	1.45	1.56	1.88	1.80	**6.59**	**1.85**	**46.85**	**32.77**	**53.44**	**34.62**
YNL045W	0.92	1.42	1.60	1.68	1.77	2.07	2.04	**7.77**	**2.87**	**48.41**	**31.80**	**56.18**	**34.67**
YIL112W	0.86	1.26	1.49	1.65	1.76	2.02	1.93	**13.23**	**2.57**	**66.85**	**32.12**	**80.08**	**34.69**
YGR258C	0.87	1.21	1.36	1.42	1.52	1.79	1.73	**8.27**	**2.01**	**49.23**	**32.68**	**57.50**	**34.69**
YDR273W	0.91	1.32	1.61	1.59	1.62	1.98	1.88	**9.62**	**1.32**	**74.93**	**33.39**	**84.55**	**34.71**
YKL146W	0.90	1.37	1.51	1.57	1.65	1.96	1.89	**11.40**	**1.82**	**57.79**	**32.94**	**69.19**	**34.76**
YHR037W	0.88	1.20	1.35	1.49	1.59	1.90	1.85	**10.97**	**2.48**	**57.78**	**32.30**	**68.75**	**34.78**
YKL032C	1.01	1.44	1.60	1.61	1.69	1.89	1.84	**12.51**	**2.40**	**69.26**	**32.39**	**81.77**	**34.79**
YKL134C	0.98	1.46	1.63	1.75	1.84	2.07	2.09	**7.33**	**2.41**	**52.78**	**32.41**	**60.11**	**34.81**
YMR221C	0.86	1.14	1.28	1.34	1.45	1.66	1.61	**9.62**	**2.60**	**77.62**	**32.24**	**87.25**	**34.84**
YGL060W	0.88	1.34	1.49	1.52	1.64	1.93	1.84	**8.37**	**1.88**	**59.29**	**32.98**	**67.67**	**34.86**
YHR080C	0.84	1.05	1.26	1.41	1.51	1.80	1.75	**11.48**	**2.42**	**66.24**	**32.44**	**77.72**	**34.86**
YER033C	1.08	1.74	1.90	1.99	2.08	2.28	2.28	**8.33**	**1.92**	**62.84**	**32.98**	**71.18**	**34.89**
YLR224W	1.06	1.60	1.70	1.76	1.85	2.07	2.05	**10.74**	**1.88**	**57.34**	**33.03**	**68.08**	**34.91**
YHL035C	0.93	1.28	1.49	1.76	1.71	1.90	1.85	**11.64**	**2.69**	**67.21**	**32.24**	**78.85**	**34.93**
YPR189W	0.90	1.29	1.39	1.44	1.51	1.83	1.75	**9.22**	**2.32**	**56.42**	**32.62**	**65.65**	**34.93**
YHR039C	0.92	1.32	1.49	1.66	1.75	2.04	1.99	**13.73**	**2.69**	**69.83**	**32.27**	**83.56**	**34.96**
YDR533C	0.86	1.26	1.43	1.48	1.59	1.91	1.81	**10.16**	**1.65**	**66.35**	**33.34**	**76.52**	**34.98**
YOL019W	0.95	1.43	1.62	1.68	1.78	2.03	1.97	**12.09**	**1.87**	**77.86**	**33.12**	**89.95**	**34.99**
YHR210C	0.87	1.27	1.40	1.44	1.56	1.85	1.78	**7.87**	**3.08**	**54.01**	**31.92**	**61.88**	**35.00**
YNL211C	0.71	1.05	1.12	1.18	1.25	1.53	1.46	**8.42**	**2.39**	**46.01**	**32.62**	**54.43**	**35.01**
YOR133W	0.95	1.44	1.60	1.64	1.78	2.04	1.97	**10.90**	**2.13**	**71.31**	**32.89**	**82.21**	**35.02**
YDL182W	0.85	1.40	1.63	1.64	1.74	2.04	2.06	**7.64**	**1.88**	**55.94**	**33.15**	**63.58**	**35.03**
YPL140C	0.99	1.53	1.71	1.74	1.86	2.10	2.06	**8.50**	**1.98**	**57.50**	**33.08**	**66.00**	**35.06**
YLR283W	1.04	1.62	1.75	1.83	1.93	2.17	2.15	**10.31**	**2.32**	**48.59**	**32.76**	**58.89**	**35.08**
YGL114W	0.82	1.32	1.48	1.54	1.68	1.98	1.89	**8.13**	**2.29**	**53.83**	**32.81**	**61.97**	**35.10**
YHR097C	0.91	1.24	1.40	1.54	1.63	1.96	1.96	**15.17**	**2.70**	**71.82**	**32.41**	**87.00**	**35.11**
YGL138C	0.89	1.46	1.61	1.67	1.79	2.07	1.99	**9.11**	**2.32**	**58.73**	**32.81**	**67.84**	**35.13**
YPR043W	0.90	1.24	1.22	1.34	1.42	1.51	1.55	**9.94**	**2.53**	**55.14**	**32.68**	**65.09**	**35.21**
YIR033W	0.90	1.38	1.53	1.60	1.71	1.95	1.92	**9.33**	**2.53**	**54.83**	**32.68**	**64.15**	**35.22**
YKR082W	0.91	1.32	1.48	1.72	1.70	1.92	1.92	**9.76**	**2.20**	**60.39**	**33.03**	**70.16**	**35.23**
YMR065W	0.86	1.19	1.35	1.37	1.49	1.76	1.66	**9.46**	**2.39**	**70.43**	**32.87**	**79.89**	**35.26**
YPL246C	1.00	1.55	1.70	1.74	1.86	2.10	2.06	**12.22**	**2.16**	**65.65**	**33.10**	**77.87**	**35.27**
YHR135C	0.86	1.12	1.32	1.45	1.55	1.82	1.72	**9.94**	**2.10**	**59.27**	**33.20**	**69.21**	**35.30**
YGR142W	0.96	1.33	1.48	1.59	1.71	2.01	1.88	**8.07**	**1.39**	**64.01**	**33.93**	**72.08**	**35.32**
YNL215W	0.64	0.81	0.93	0.97	1.03	1.35	1.22	**9.66**	**3.18**	**49.74**	**32.15**	**59.39**	**35.33**
YBR207W	1.06	1.70	1.88	1.89	1.97	2.18	2.21	**10.07**	**1.90**	**66.57**	**33.44**	**76.63**	**35.34**
YGR271C-A	0.91	1.10	1.29	1.44	1.58	1.92	1.86	**13.10**	**2.47**	**69.90**	**32.87**	**83.00**	**35.35**
YPL171C	0.90	1.44	1.50	1.57	1.71	1.73	1.83	**8.31**	**1.97**	**39.84**	**33.38**	**48.16**	**35.35**
YOR238W	0.95	1.43	1.58	1.60	1.69	1.78	1.96	**9.93**	**3.03**	**47.92**	**32.32**	**57.85**	**35.36**
YPL245W	0.93	1.41	1.43	1.57	1.66	1.96	1.83	**9.36**	**2.08**	**58.50**	**33.29**	**67.86**	**35.37**
YDR214W	0.92	1.38	1.61	1.70	1.80	2.05	2.02	**11.00**	**1.23**	**81.14**	**34.15**	**92.14**	**35.38**
YJR110W	0.84	1.13	1.30	1.35	1.46	1.75	1.66	**7.33**	**2.75**	**47.11**	**32.64**	**54.44**	**35.39**
YJR070C	0.85	1.21	1.45	1.43	1.51	1.83	1.80	**9.75**	**2.99**	**50.30**	**32.41**	**60.06**	**35.40**
YPL248C	1.13	1.77	1.92	1.95	2.07	2.19	2.21	**10.11**	**2.36**	**64.58**	**33.04**	**74.69**	**35.40**
YLR297W	0.95	1.33	1.45	1.48	1.54	1.76	1.74	**12.60**	**1.78**	**60.05**	**33.64**	**72.65**	**35.43**
YBL082C	0.90	1.32	1.36	1.50	1.58	1.85	1.83	**12.08**	**2.53**	**62.06**	**32.91**	**74.14**	**35.44**
YLR267W	0.99	1.42	1.54	1.60	1.68	1.92	1.89	**8.74**	**2.12**	**47.63**	**33.32**	**56.38**	**35.44**
YBR150C	0.99	1.43	1.61	1.71	1.87	2.11	2.06	**9.68**	**2.24**	**65.61**	**33.24**	**75.29**	**35.47**
YLR300W	0.90	1.35	1.53	1.66	1.80	2.00	2.00	**11.57**	**1.92**	**71.89**	**33.57**	**83.46**	**35.49**
YLR173W	1.02	1.58	1.73	1.81	1.88	2.12	2.10	**8.07**	**1.68**	**46.77**	**33.82**	**54.85**	**35.50**
YGL236C	0.82	1.25	1.41	1.47	1.58	1.88	1.80	**9.04**	**2.13**	**56.35**	**33.38**	**65.39**	**35.51**
YPR046W	0.94	1.28	1.23	1.33	1.37	1.43	1.49	**10.81**	**3.00**	**62.78**	**32.53**	**73.58**	**35.53**
YPL051W	0.91	1.36	1.49	1.65	1.76	1.89	1.90	**9.16**	**2.45**	**46.31**	**33.09**	**55.47**	**35.53**
YGR161W-C	1.03	1.55	1.70	1.79	1.90	2.10	2.08	**7.54**	**2.51**	**50.21**	**33.04**	**57.74**	**35.55**
YLR193C	0.98	1.47	1.61	1.71	1.80	2.09	2.07	**11.15**	**1.95**	**56.68**	**33.64**	**67.83**	**35.59**
YNL104C	0.85	1.19	1.40	1.44	1.52	1.91	1.87	**8.24**	**3.13**	**53.72**	**32.47**	**61.96**	**35.60**
YPR047W	0.93	1.32	1.34	1.47	1.54	1.63	1.69	**7.42**	**1.99**	**56.76**	**33.61**	**64.18**	**35.61**
YIL133C	0.83	1.00	1.17	1.29	1.37	1.63	1.59	**10.19**	**3.05**	**63.90**	**32.58**	**74.09**	**35.63**
YMR110C	1.00	1.45	1.56	1.59	1.63	1.90	1.84	**8.98**	**2.11**	**56.06**	**33.53**	**65.04**	**35.63**
YLR128W	0.91	1.33	1.50	1.54	1.60	1.91	1.81	**7.65**	**2.01**	**60.48**	**33.65**	**68.13**	**35.66**
YDR155C	0.93	1.37	1.57	1.64	1.77	1.99	1.93	**10.30**	**1.27**	**87.03**	**34.39**	**97.33**	**35.67**
YIL069C	0.88	1.12	1.29	1.38	1.48	1.71	1.67	**9.82**	**3.27**	**57.69**	**32.41**	**67.51**	**35.68**
YNL128W	0.82	1.15	1.24	1.27	1.33	1.66	1.59	**8.37**	**2.66**	**51.40**	**33.03**	**59.76**	**35.69**
YPL145C	0.92	1.38	1.50	1.66	1.80	1.84	1.94	**9.67**	**2.21**	**31.72**	**33.50**	**41.39**	**35.70**
YHR027C	0.89	1.15	1.38	1.50	1.62	1.86	1.86	**9.39**	**2.44**	**65.16**	**33.35**	**74.55**	**35.79**
YJR094C	0.98	1.46	1.64	1.67	1.75	2.03	1.94	**11.27**	**2.19**	**70.78**	**33.61**	**82.05**	**35.80**
YPL135W	0.98	1.44	1.62	1.68	1.78	2.06	1.99	**7.89**	**1.94**	**55.37**	**33.90**	**63.26**	**35.84**
YOR192C	0.92	1.43	1.59	1.72	1.81	1.91	2.05	**9.76**	**3.10**	**44.71**	**32.76**	**54.47**	**35.86**
YNL058C	0.88	1.21	1.31	1.33	1.40	1.72	1.63	**9.43**	**3.02**	**51.79**	**32.85**	**61.22**	**35.87**
YBR288C	0.90	1.36	1.54	1.45	1.58	1.89	1.86	**7.60**	**2.01**	**53.89**	**33.88**	**61.49**	**35.89**
YLR309C	0.94	1.43	1.59	1.69	1.84	2.03	2.02	**9.55**	**1.94**	**63.80**	**33.97**	**73.35**	**35.90**
YGL015C	0.88	1.16	1.33	1.32	1.40	1.71	1.59	**13.06**	**1.69**	**77.92**	**34.24**	**90.97**	**35.93**
YNL095C	0.69	0.93	1.01	1.11	1.17	1.40	1.38	**10.35**	**3.52**	**54.03**	**32.41**	**64.38**	**35.94**
YMR199W	0.99	1.47	1.63	1.77	1.86	2.08	2.09	**9.14**	**3.46**	**50.42**	**32.50**	**59.56**	**35.96**
YLR313C	0.98	1.61	1.77	1.86	1.96	2.13	2.16	**10.66**	**2.70**	**46.54**	**33.26**	**57.20**	**35.96**
YDR452W	0.95	1.44	1.66	1.65	1.74	2.08	2.06	**10.38**	**2.22**	**60.03**	**33.76**	**70.42**	**35.98**
YNL160W	0.96	1.47	1.62	1.70	1.83	2.02	2.00	**11.48**	**2.38**	**60.11**	**33.61**	**71.60**	**36.00**
YFL050C	0.98	1.55	1.72	1.81	1.96	2.12	2.09	**17.24**	**2.53**	**89.11**	**33.48**	**106.35**	**36.02**
YER166W	0.94	1.41	1.55	1.64	1.77	1.96	1.93	**16.27**	**3.39**	**86.59**	**32.64**	**102.86**	**36.03**
YPR100W	0.87	1.18	1.31	1.48	1.56	1.69	1.81	**8.00**	**1.76**	**58.96**	**34.29**	**66.96**	**36.05**
YJL108C	0.89	1.34	1.55	1.63	1.74	2.01	1.94	**9.53**	**1.64**	**64.52**	**34.47**	**74.05**	**36.11**
YNL218W	0.79	1.10	1.23	1.40	1.50	1.78	1.74	**7.70**	**3.03**	**44.90**	**33.09**	**52.60**	**36.12**
YFR001W	0.91	1.18	1.38	1.48	1.63	1.94	1.85	**11.94**	**2.51**	**65.96**	**33.61**	**77.91**	**36.12**
YPR152C	0.87	1.16	1.31	1.36	1.44	1.77	1.68	**9.06**	**1.95**	**54.27**	**34.20**	**63.33**	**36.15**
YLR188W	1.09	1.46	1.56	1.58	1.63	1.86	1.81	**9.85**	**2.82**	**48.16**	**33.38**	**58.01**	**36.19**
YPR133W-A	0.91	1.36	1.54	1.76	1.62	1.84	1.75	**13.15**	**2.68**	**61.86**	**33.58**	**75.00**	**36.26**
YLL024C	1.02	1.53	1.71	1.78	1.85	2.10	2.04	**10.79**	**1.92**	**74.80**	**34.37**	**85.58**	**36.29**
YKR060W	0.87	1.26	1.44	1.53	1.63	1.91	1.87	**10.17**	**2.65**	**60.35**	**33.64**	**70.52**	**36.30**
YNL030W	0.86	1.17	1.30	1.34	1.40	1.75	1.64	**10.35**	**3.86**	**55.33**	**32.44**	**65.68**	**36.30**
YOL092W	0.96	1.38	1.55	1.58	1.68	1.96	1.87	**9.11**	**1.98**	**64.15**	**34.33**	**73.26**	**36.31**
YLR191W	1.01	1.53	1.73	1.80	1.90	2.17	2.14	**9.42**	**2.02**	**49.99**	**34.35**	**59.41**	**36.37**
YKR087C	0.88	1.32	1.48	1.57	1.71	1.97	1.91	**10.40**	**2.95**	**58.28**	**33.44**	**68.68**	**36.38**
YHR121W	0.89	1.09	1.25	1.37	1.46	1.77	1.81	**10.13**	**3.11**	**55.42**	**33.29**	**65.55**	**36.40**
YGR199W	0.95	1.47	1.65	1.72	1.83	2.07	2.01	**10.37**	**2.74**	**62.06**	**33.69**	**72.43**	**36.43**
YPL249C	0.99	1.63	1.67	1.83	1.92	1.99	2.06	**8.01**	**2.77**	**55.40**	**33.67**	**63.41**	**36.44**
YBR033W	0.88	1.25	1.40	1.57	1.66	1.91	1.82	**12.20**	**2.48**	**68.08**	**33.96**	**80.28**	**36.45**
YHR022C	0.89	1.15	1.40	1.39	1.52	1.80	1.77	**9.71**	**2.27**	**65.32**	**34.20**	**75.03**	**36.47**
YHR081W	0.93	1.35	1.42	1.55	1.63	1.93	1.89	**13.20**	**3.81**	**63.34**	**32.71**	**76.54**	**36.51**
YBR125C	0.97	1.47	1.65	1.85	1.95	2.17	2.16	**12.51**	**3.85**	**59.24**	**32.68**	**71.75**	**36.52**
YBR222C	0.92	1.33	1.46	1.62	1.75	1.97	1.95	**12.04**	**3.08**	**56.32**	**33.44**	**68.36**	**36.52**
YIL029C	0.86	1.21	1.41	1.51	1.63	1.86	1.84	**9.40**	**3.38**	**57.40**	**33.17**	**66.80**	**36.54**
YDL215C	0.87	1.17	1.32	1.32	1.48	1.78	1.70	**9.94**	**2.43**	**58.94**	**34.12**	**68.89**	**36.55**
YOR365C	0.89	1.31	1.35	1.52	1.61	1.81	1.79	**9.19**	**3.01**	**44.82**	**33.55**	**54.01**	**36.56**
YMR160W	0.99	1.61	1.75	1.79	1.84	1.93	2.07	**7.97**	**2.75**	**51.69**	**33.82**	**59.66**	**36.56**
YPL115C	1.14	1.71	1.89	1.99	2.05	2.24	2.25	**8.27**	**1.75**	**47.26**	**34.83**	**55.53**	**36.59**
YER099C	0.88	1.40	1.59	1.70	1.80	2.08	2.03	**10.18**	**2.09**	**63.72**	**34.49**	**73.90**	**36.59**
YKR006C	0.89	1.34	1.50	1.56	1.68	1.96	1.92	**10.96**	**2.48**	**54.42**	**34.14**	**65.38**	**36.62**
YGR244C	0.92	1.36	1.57	1.74	1.85	2.03	2.03	**8.17**	**1.81**	**62.34**	**34.81**	**70.52**	**36.62**
YNL193W	0.64	0.86	0.93	1.01	1.07	1.34	1.29	**7.85**	**3.78**	**46.99**	**32.85**	**54.84**	**36.64**
YKR059W	0.87	1.21	1.35	1.43	1.57	1.80	1.76	**10.51**	**3.82**	**55.55**	**32.82**	**66.05**	**36.65**
YNL059C	0.85	1.25	1.37	1.40	1.50	1.83	1.74	**8.55**	**3.53**	**48.88**	**33.12**	**57.43**	**36.65**
YKR070W	0.92	1.37	1.52	1.61	1.74	1.96	1.96	**9.44**	**2.57**	**48.16**	**34.08**	**57.60**	**36.65**
YLL010C	0.96	1.45	1.63	1.68	1.78	2.07	1.99	**7.23**	**1.71**	**63.43**	**34.96**	**70.66**	**36.66**
YOR245C	0.90	1.42	1.57	1.69	1.84	1.88	2.00	**9.30**	**3.08**	**42.15**	**33.58**	**51.45**	**36.67**
YBR242W	1.05	1.62	1.76	1.83	1.92	2.14	2.13	**9.47**	**1.80**	**60.81**	**34.87**	**70.29**	**36.67**
YMR156C	0.95	1.33	1.48	1.52	1.59	1.85	1.80	**10.24**	**3.39**	**52.84**	**33.29**	**63.08**	**36.68**
YPL037C	0.94	1.41	1.57	1.78	1.89	2.02	2.06	**9.71**	**2.34**	**49.25**	**34.35**	**58.96**	**36.68**
YJL139C	0.98	1.44	1.63	1.67	1.78	2.05	1.98	**10.40**	**2.07**	**63.17**	**34.62**	**73.58**	**36.69**
YPL047W	0.91	1.37	1.45	1.62	1.73	1.93	1.93	**11.37**	**3.45**	**52.00**	**33.26**	**63.37**	**36.71**
YOR271C	0.89	1.26	1.34	1.42	1.51	1.60	1.76	**10.66**	**2.22**	**49.91**	**34.52**	**60.58**	**36.74**
YNR018W	0.90	1.19	1.32	1.32	1.40	1.67	1.56	**10.67**	**1.90**	**64.13**	**34.85**	**74.80**	**36.75**
YJL051W	0.99	1.58	1.78	1.86	1.97	2.18	2.15	**8.99**	**2.22**	**58.20**	**34.54**	**67.19**	**36.75**
YOL158C	0.91	1.26	1.41	1.41	1.52	1.78	1.68	**11.92**	**2.19**	**72.90**	**34.58**	**84.82**	**36.77**
YPL129W	0.99	1.33	1.50	1.53	1.64	1.95	1.87	**9.59**	**2.09**	**57.09**	**34.71**	**66.68**	**36.79**
YFR041C	0.91	1.36	1.51	1.53	1.65	1.94	1.84	**9.73**	**2.34**	**61.01**	**34.47**	**70.74**	**36.81**
YOR386W	0.89	1.29	1.49	1.57	1.67	1.93	1.90	**10.09**	**3.05**	**46.05**	**33.76**	**56.14**	**36.81**
YPR145W	0.88	1.30	1.42	1.48	1.56	1.86	1.80	**9.68**	**2.18**	**59.93**	**34.70**	**69.61**	**36.87**
YMR202W	0.87	1.27	1.45	1.48	1.57	1.88	1.76	**9.96**	**2.38**	**63.39**	**34.52**	**73.35**	**36.89**
YPR129W	0.95	1.39	1.52	1.71	1.79	1.88	2.02	**7.61**	**2.81**	**60.50**	**34.11**	**68.11**	**36.92**

ORF name	OD at 600 nm at sampling time points (hours)							GLUCOSE		FRUCTOSE		TOTAL SUGARS	
	0 h	20 h	27 h	44 h	66 h	93 h	113 h	120 h	146 h	120 h	146 h	120 h	146 h
YKL008C	0.86	1.17	1.41	1.47	1.59	1.89	1.86	**10.22**	**4.14**	**50.91**	**32.79**	**61.13**	**36.93**
YLR325C	0.94	1.37	1.53	1.54	1.64	1.94	1.84	**8.39**	**2.03**	**59.45**	**34.89**	**67.84**	**36.93**
YMR228W	0.98	1.46	1.65	1.78	1.86	1.97	2.13	**8.55**	**2.52**	**50.09**	**34.40**	**58.63**	**36.93**
YER019C-A	0.86	1.27	1.47	1.58	1.68	1.97	1.91	**9.63**	**1.77**	**60.42**	**35.17**	**70.05**	**36.94**
YPL150W	1.05	1.55	1.74	1.81	1.91	2.11	2.07	**11.51**	**2.20**	**71.60**	**34.77**	**83.11**	**36.96**
YNL073W	0.96	1.43	1.63	1.70	1.78	2.07	2.01	**11.58**	**2.43**	**71.54**	**34.56**	**83.12**	**36.99**
YMR147W	1.04	1.70	1.83	1.93	2.03	2.12	2.22	**10.38**	**2.48**	**47.87**	**34.52**	**58.25**	**37.01**
YHR126W	0.93	1.35	1.42	1.59	1.68	1.95	1.92	**13.24**	**3.03**	**56.52**	**33.99**	**69.76**	**37.02**
YIL095W	0.89	1.24	1.40	1.58	1.68	1.95	1.85	**15.23**	**2.92**	**73.00**	**34.11**	**88.24**	**37.03**
YGL261C	0.88	1.39	1.53	1.61	1.73	2.00	1.94	**9.70**	**2.60**	**57.77**	**34.45**	**67.47**	**37.05**
YJR084W	0.97	1.48	1.66	1.70	1.83	2.06	1.99	**9.72**	**1.69**	**66.90**	**35.38**	**76.62**	**37.07**
YPL212C	0.88	1.24	1.21	1.32	1.40	1.46	1.54	**8.17**	**2.41**	**53.63**	**34.67**	**61.79**	**37.08**
YDL109C	0.87	1.38	1.58	1.52	1.65	1.95	1.96	**8.38**	**2.09**	**58.96**	**35.00**	**67.34**	**37.09**
YPL220W	1.12	1.74	1.91	1.99	2.08	2.25	2.26	**10.33**	**2.11**	**65.14**	**35.04**	**75.47**	**37.16**
YKR009C	0.85	1.20	1.36	1.45	1.59	1.80	1.77	**9.52**	**3.28**	**48.10**	**33.88**	**57.62**	**37.16**
YJR036C	0.98	1.51	1.67	1.73	1.84	2.06	2.02	**8.82**	**3.46**	**47.90**	**33.78**	**56.72**	**37.24**
YNL034W	0.82	1.11	1.25	1.29	1.36	1.66	1.58	**9.91**	**4.34**	**46.91**	**32.91**	**56.82**	**37.25**
YPR018W	0.90	1.30	1.34	1.50	1.59	1.67	1.84	**13.06**	**3.28**	**60.29**	**33.96**	**73.36**	**37.25**
YER049W	0.85	1.24	1.43	1.53	1.63	1.94	1.87	**10.36**	**1.86**	**67.04**	**35.40**	**77.40**	**37.26**
YLR258W	1.08	1.45	1.57	1.65	1.69	1.88	1.88	**9.51**	**2.32**	**48.59**	**34.99**	**58.09**	**37.31**
YDR517W	0.94	1.42	1.60	1.65	1.77	2.02	2.02	**9.00**	**2.51**	**60.01**	**34.81**	**69.02**	**37.32**
YOL089C	0.98	1.50	1.65	1.71	1.80	2.02	1.98	**10.04**	**2.00**	**67.50**	**35.34**	**77.54**	**37.34**
YJR009C	0.90	1.33	1.52	1.52	1.63	1.93	1.81	**10.91**	**2.34**	**70.41**	**35.02**	**81.32**	**37.37**
YGR202C	0.86	1.14	1.29	1.32	1.45	1.69	1.63	**8.68**	**2.55**	**50.65**	**34.83**	**59.34**	**37.38**
YMR198W	0.88	1.27	1.44	1.45	1.55	1.86	1.74	**8.68**	**2.11**	**64.31**	**35.27**	**72.99**	**37.39**
YNL196C	0.76	0.95	1.03	1.12	1.17	1.46	1.37	**9.54**	**3.78**	**52.10**	**33.61**	**61.64**	**37.39**
YDL222C	0.81	1.05	1.25	1.20	1.31	1.65	1.60	**6.95**	**1.54**	**50.77**	**35.86**	**57.72**	**37.41**
YEL025C	0.90	1.42	1.62	1.68	1.76	2.07	1.99	**9.81**	**2.70**	**56.04**	**34.73**	**65.85**	**37.42**
YPL112C	0.94	1.34	1.49	1.67	1.77	1.97	1.91	**9.59**	**2.59**	**50.63**	**34.84**	**60.22**	**37.44**
YPL108W	0.93	1.36	1.50	1.68	1.79	1.99	1.94	**8.83**	**2.36**	**43.17**	**35.08**	**52.00**	**37.44**
YIL056W	0.88	1.21	1.34	1.48	1.58	1.86	1.74	**12.33**	**2.55**	**66.80**	**34.93**	**79.13**	**37.48**
YIL154C	0.89	1.15	1.27	1.43	1.52	1.77	1.68	**13.45**	**2.64**	**71.88**	**34.84**	**85.32**	**37.48**
YJR135C	0.88	1.12	1.22	1.22	1.38	1.57	1.54	**12.76**	**3.05**	**50.53**	**34.43**	**63.29**	**37.49**
YLR294C	0.87	1.13	1.27	1.33	1.44	1.68	1.62	**10.27**	**2.30**	**64.05**	**35.19**	**74.32**	**37.49**
YHR191C	0.87	1.45	1.59	1.61	1.71	2.00	1.94	**6.35**	**3.08**	**48.24**	**34.47**	**54.59**	**37.55**
YPL158C	1.08	1.55	1.71	1.80	1.89	2.09	2.09	**10.48**	**2.43**	**60.01**	**35.17**	**70.49**	**37.59**
YLL029W	0.85	1.14	1.30	1.35	1.45	1.77	1.73	**11.18**	**2.41**	**67.33**	**35.19**	**78.51**	**37.60**
YNR067C	0.94	1.22	1.37	1.43	1.50	1.76	1.71	**8.22**	**1.87**	**59.66**	**35.74**	**67.88**	**37.61**
YPL189C-A	0.93	1.40	1.47	1.52	1.62	1.67	1.74	**11.14**	**2.85**	**34.20**	**34.78**	**45.35**	**37.63**
YIL138C	0.87	1.08	1.20	1.31	1.44	1.71	1.55	**12.56**	**3.02**	**68.08**	**34.61**	**80.64**	**37.63**
YIL122W	0.96	1.39	1.55	1.68	1.81	2.02	1.93	**13.23**	**3.20**	**66.62**	**34.46**	**79.85**	**37.66**
YDR326C	0.88	1.38	1.57	1.61	1.72	2.01	2.02	**7.76**	**2.02**	**58.51**	**35.65**	**66.28**	**37.67**
YGR194C	0.96	1.31	1.47	1.54	1.68	1.89	1.81	**10.64**	**3.28**	**61.01**	**34.43**	**71.65**	**37.72**
YOR385W	0.88	1.50	1.66	1.70	1.78	1.94	1.92	**8.00**	**2.96**	**48.22**	**34.78**	**56.21**	**37.75**
YGR273C	0.93	1.32	1.49	1.60	1.72	1.91	1.89	**8.00**	**1.24**	**65.28**	**36.52**	**73.28**	**37.75**
YDL238C	0.87	1.33	1.55	1.50	1.60	1.89	1.93	**9.12**	**2.07**	**57.48**	**35.78**	**66.60**	**37.85**
YFL012W	0.87	1.32	1.50	1.56	1.68	1.98	1.90	**9.44**	**2.45**	**56.89**	**35.42**	**66.33**	**37.87**
YHR086W-A	1.01	1.37	1.47	1.60	1.66	1.93	1.95	**11.45**	**2.24**	**61.47**	**35.63**	**72.92**	**37.87**
YMR276W	0.94	1.48	1.65	1.67	1.81	2.06	2.01	**11.80**	**2.45**	**73.28**	**35.44**	**85.08**	**37.90**
YBR186W	0.85	1.13	1.30	1.34	1.46	1.74	1.65	**14.51**	**2.53**	**81.19**	**35.45**	**95.70**	**37.98**
YDL239C	0.91	1.56	1.76	1.70	1.82	2.10	2.14	**10.24**	**2.05**	**64.27**	**35.97**	**74.50**	**38.02**
YJL043W	0.88	1.21	1.35	1.41	1.50	1.82	1.75	**9.84**	**3.97**	**55.61**	**34.05**	**65.45**	**38.02**
YNR027W	0.93	1.24	1.40	1.39	1.48	1.77	1.64	**10.75**	**2.28**	**69.36**	**35.76**	**80.11**	**38.04**
YNL164C	0.84	1.27	1.34	1.38	1.45	1.79	1.71	**8.20**	**3.61**	**42.83**	**34.46**	**51.03**	**38.07**
YJL037W	0.88	1.26	1.41	1.51	1.63	1.90	1.86	**10.99**	**3.70**	**54.59**	**34.37**	**65.59**	**38.07**
YDL123W	0.83	1.09	1.25	1.25	1.43	1.75	1.66	**8.72**	**1.64**	**58.61**	**36.43**	**67.33**	**38.07**
YGR148C	1.01	1.56	1.72	1.80	1.90	2.12	2.08	**11.99**	**2.99**	**68.95**	**35.11**	**80.93**	**38.10**
YBR295W	0.94	1.37	1.47	1.64	1.73	2.02	1.99	**12.25**	**2.37**	**62.65**	**35.78**	**74.90**	**38.15**
YER002W	0.89	1.43	1.62	1.73	1.83	2.10	2.04	**10.61**	**2.34**	**61.85**	**35.82**	**72.46**	**38.16**
YNL029C	0.84	1.11	1.23	1.24	1.34	1.70	1.61	**12.53**	**3.28**	**51.53**	**34.90**	**64.06**	**38.18**
YPR040W	1.06	1.70	1.85	1.88	1.99	2.21	2.17	**9.43**	**1.91**	**63.56**	**36.29**	**72.99**	**38.20**
YDR076W	0.93	1.21	1.39	1.46	1.61	1.82	1.71	**10.33**	**3.25**	**59.57**	**34.96**	**69.91**	**38.21**
YMR161W	0.98	1.61	1.76	1.86	1.95	2.04	2.16	**9.90**	**2.38**	**52.35**	**35.87**	**62.25**	**38.25**
YPL191C	0.90	1.32	1.39	1.38	1.48	1.53	1.61	**10.78**	**2.75**	**32.05**	**35.52**	**42.83**	**38.27**
YIR031C	1.14	1.69	1.88	1.95	2.03	2.10	2.23	**8.07**	**1.20**	**67.13**	**37.09**	**75.20**	**38.29**
YNL199C	0.87	1.18	1.30	1.39	1.53	1.73	1.71	**16.42**	**2.86**	**68.29**	**35.43**	**84.70**	**38.29**
YPR009W	0.87	1.20	1.39	1.44	1.55	1.89	1.79	**10.81**	**2.08**	**66.27**	**36.22**	**77.09**	**38.30**
YDR263C	0.89	1.39	1.55	1.54	1.63	1.95	1.95	**10.24**	**2.45**	**57.93**	**35.86**	**68.17**	**38.32**
YCR015C	0.93	1.27	1.43	1.50	1.63	1.84	1.79	**13.46**	**2.55**	**85.07**	**35.86**	**98.53**	**38.41**
YKR056W	0.90	1.36	1.54	1.57	1.69	1.96	1.88	**9.56**	**2.11**	**72.38**	**36.31**	**81.94**	**38.41**
YGL191W	0.81	1.25	1.40	1.48	1.58	1.88	1.82	**8.55**	**2.14**	**60.64**	**36.29**	**69.19**	**38.43**
YER163C	0.91	1.44	1.61	1.74	1.86	2.12	2.07	**11.42**	**2.02**	**71.09**	**36.41**	**82.52**	**38.43**
YLL045C	0.97	1.37	1.61	1.65	1.77	2.06	2.10	**10.42**	**2.25**	**51.75**	**36.19**	**62.16**	**38.44**
YBL013W	0.90	1.43	1.59	1.58	1.82	2.01	2.01	**12.67**	**2.55**	**62.42**	**35.90**	**75.09**	**38.45**
YGL060W	0.87	1.36	1.51	1.55	1.69	1.97	1.88	**9.14**	**2.47**	**57.83**	**35.99**	**66.97**	**38.46**
YDR258C	0.87	1.39	1.59	1.62	1.72	2.01	2.03	**10.70**	**2.30**	**65.05**	**36.20**	**75.75**	**38.50**
YLR335W	0.94	1.17	1.29	1.40	1.47	1.80	1.73	**11.32**	**3.54**	**58.11**	**35.02**	**69.43**	**38.56**
YNL066W	0.89	1.19	1.34	1.36	1.41	1.74	1.62	**11.17**	**2.61**	**69.82**	**35.95**	**80.99**	**38.56**
YDR536W	0.94	1.45	1.63	1.73	1.84	2.08	2.04	**8.85**	**2.46**	**58.88**	**36.18**	**67.73**	**38.64**
YBR086C	0.90	1.29	1.44	1.62	1.73	1.95	1.88	**16.08**	**2.94**	**75.05**	**35.72**	**91.13**	**38.66**
YLR288C	0.94	1.33	1.48	1.58	1.68	1.94	1.92	**10.72**	**2.13**	**56.89**	**36.54**	**67.61**	**38.67**
YKL110C	0.88	1.14	1.35	1.47	1.57	1.89	1.86	**9.96**	**3.41**	**56.04**	**35.27**	**66.00**	**38.68**
YKL167C	0.88	1.31	1.47	1.55	1.64	1.96	1.88	**10.38**	**2.01**	**55.10**	**36.69**	**65.48**	**38.70**
YGL063W	0.87	1.29	1.45	1.50	1.63	1.91	1.83	**9.51**	**2.20**	**57.44**	**36.52**	**66.95**	**38.71**
YMR238W	0.88	1.26	1.44	1.54	1.63	1.91	1.89	**8.05**	**3.10**	**43.95**	**35.63**	**52.00**	**38.73**
YLR390W	0.93	1.44	1.60	1.66	1.81	2.03	1.97	**9.87**	**2.69**	**68.67**	**36.07**	**78.54**	**38.77**
YIL073C	0.92	1.23	1.37	1.49	1.57	1.87	1.73	**12.15**	**3.37**	**68.90**	**35.40**	**81.06**	**38.77**
YNL217W	0.68	1.01	1.12	1.24	1.34	1.56	1.54	**8.95**	**3.47**	**49.23**	**35.31**	**58.18**	**38.78**
YNL214W	0.68	0.89	1.02	1.07	1.13	1.41	1.31	**9.24**	**2.92**	**48.37**	**35.87**	**57.62**	**38.78**
YBL054W	0.91	1.38	1.54	1.55	1.75	1.94	1.90	**7.98**	**3.09**	**36.84**	**35.69**	**44.83**	**38.78**
YLL063C	0.88	1.23	1.36	1.51	1.60	1.92	1.84	**9.37**	**2.98**	**49.23**	**35.81**	**58.61**	**38.79**
YHR084W	0.95	1.35	1.43	1.57	1.64	1.88	1.86	**14.75**	**3.88**	**63.16**	**34.99**	**77.91**	**38.87**
YHR087W	0.81	1.13	1.34	1.36	1.47	2.01	1.66	**10.49**	**2.47**	**68.67**	**36.43**	**79.17**	**38.90**
YPR149W	0.89	1.19	1.36	1.34	1.44	1.78	1.74	**9.91**	**2.00**	**59.47**	**36.92**	**69.38**	**38.92**
YER047C	0.90	1.35	1.51	1.58	1.70	1.98	1.89	**12.12**	**2.41**	**65.42**	**36.54**	**77.54**	**38.95**
YMR158C-A	0.98	1.55	1.71	1.80	1.89	2.13	2.10	**10.92**	**2.49**	**56.33**	**36.48**	**67.25**	**38.98**
YOR337W	0.97	1.50	1.64	1.68	1.78	2.02	1.96	**10.28**	**2.47**	**66.49**	**36.52**	**76.77**	**38.98**
YOR229W	0.88	1.26	1.41	1.42	1.51	1.84	1.72	**12.32**	**2.79**	**71.07**	**36.22**	**83.39**	**39.01**
YPR132W	0.92	1.10	1.30	1.54	1.68	1.77	1.94	**9.84**	**2.21**	**61.73**	**36.81**	**71.56**	**39.01**
YJL070C	0.91	1.35	1.55	1.57	1.68	1.98	1.87	**9.72**	**2.31**	**69.02**	**36.71**	**78.74**	**39.02**
YOR288C	0.88	1.32	1.40	1.52	1.63	1.77	1.77	**10.22**	**3.06**	**49.62**	**35.96**	**59.84**	**39.02**
YOR349W	0.87	1.25	1.32	1.47	1.56	1.66	1.73	**9.83**	**3.12**	**46.27**	**35.90**	**56.10**	**39.02**
YIL158W	0.91	1.27	1.39	1.46	1.52	1.82	1.75	**6.92**	**3.07**	**49.60**	**35.99**	**56.52**	**39.06**
YBR214W	1.19	1.97	2.13	2.21	2.30	2.37	2.42	**13.78**	**2.17**	**82.39**	**36.92**	**96.17**	**39.09**
YDR152W	1.02	1.55	1.78	1.89	2.05	2.19	2.14	**10.31**	**1.32**	**74.07**	**37.78**	**84.38**	**39.10**
YOR342C	0.90	1.36	1.41	1.56	1.65	1.75	1.80	**10.25**	**2.71**	**49.93**	**36.40**	**60.18**	**39.10**
YMR042W	0.89	1.33	1.51	1.54	1.67	1.94	1.83	**9.67**	**2.49**	**64.54**	**36.62**	**74.21**	**39.11**
YGR130C	0.97	1.44	1.61	1.70	1.79	2.00	2.00	**9.51**	**2.75**	**56.35**	**36.41**	**65.85**	**39.16**
YGL086W	0.88	1.33	1.48	1.52	1.65	1.93	1.85	**10.26**	**2.38**	**64.91**	**36.83**	**75.17**	**39.21**
YOL117W	0.87	1.17	1.32	1.31	1.40	1.72	1.57	**11.52**	**2.64**	**60.56**	**36.62**	**72.08**	**39.27**
YGL059W	0.95	1.45	1.64	1.73	1.86	2.07	2.01	**14.51**	**2.48**	**82.11**	**36.79**	**96.62**	**39.27**
YGL164C	0.87	1.30	1.45	1.51	1.64	1.93	1.84	**10.49**	**2.61**	**59.43**	**36.66**	**69.92**	**39.27**
YPR185W	0.90	1.36	1.47	1.53	1.62	1.93	1.86	**10.23**	**2.49**	**56.81**	**36.81**	**67.04**	**39.30**
YLR096W	0.83	1.06	1.20	1.27	1.36	1.60	1.54	**10.80**	**2.32**	**61.77**	**36.98**	**72.57**	**39.30**
YHR079C	0.92	1.34	1.49	1.58	1.72	1.99	1.90	**15.14**	**2.11**	**86.05**	**37.19**	**101.19**	**39.31**
YHR161C	0.90	1.30	1.43	1.45	1.57	1.84	1.76	**7.92**	**3.17**	**47.71**	**36.18**	**55.63**	**39.35**
YGL077C	0.96	1.35	1.51	1.63	1.72	1.92	1.89	**11.85**	**2.45**	**72.46**	**36.94**	**84.31**	**39.38**
YPL201C	0.95	1.47	1.47	1.61	1.70	2.00	1.85	**9.54**	**2.38**	**51.76**	**37.01**	**61.30**	**39.39**
YKR028W	0.98	1.39	1.56	1.57	1.63	1.92	1.80	**10.62**	**2.22**	**72.51**	**37.21**	**83.13**	**39.43**
YLL013C	0.88	1.29	1.44	1.49	1.64	1.93	1.89	**14.26**	**2.62**	**60.87**	**36.83**	**75.13**	**39.45**
YKL010C	0.83	1.08	1.25	1.35	1.44	1.70	1.67	**9.55**	**3.28**	**55.51**	**36.18**	**65.06**	**39.46**
YDR393W	1.09	1.66	1.84	1.92	2.02	2.26	2.26	**11.31**	**2.85**	**64.09**	**36.66**	**75.40**	**39.52**
YNL093W	0.84	1.32	1.44	1.46	1.54	1.87	1.78	**9.37**	**2.58**	**52.00**	**36.95**	**61.37**	**39.54**
YOR221C	0.89	1.17	1.25	1.29	1.48	1.67	1.64	**14.35**	**4.49**	**57.09**	**35.08**	**71.44**	**39.57**
YDL130W-A	0.84	1.25	1.49	1.48	1.64	1.92	1.91	**6.87**	**1.96**	**48.37**	**37.61**	**55.24**	**39.57**
YMR222C	1.06	1.60	1.70	1.73	1.81	1.86	1.99	**9.22**	**2.95**	**52.33**	**36.63**	**61.55**	**39.58**
YGR276C	0.89	1.23	1.53	1.51	1.77	1.95	1.83	**9.00**	**2.35**	**55.09**	**37.24**	**64.09**	**39.60**
YJR056C	0.89	1.38	1.55	1.59	1.74	2.01	1.99	**10.01**	**4.02**	**56.97**	**35.65**	**66.98**	**39.68**
YJR150C	0.94	1.38	1.55	1.59	1.70	1.95	1.86	**9.96**	**2.17**	**69.16**	**37.51**	**79.13**	**39.68**
YLR006C	0.90	1.30	1.48	1.53	1.63	1.95	1.87	**9.11**	**2.22**	**64.25**	**37.47**	**73.35**	**39.69**
YNL108C	0.86	1.30	1.41	1.41	1.49	1.87	1.83	**7.28**	**3.56**	**43.34**	**36.13**	**50.63**	**39.69**
YLR213C	0.99	1.34	1.49	1.56	1.62	1.89	1.85	**8.96**	**2.32**	**53.95**	**37.39**	**62.91**	**39.71**
YER122C	0.91	1.53	1.71	1.80	1.90	2.15	2.11	**9.23**	**2.20**	**62.71**	**37.53**	**71.94**	**39.72**
YPR002W	1.04	1.48	1.66	1.70	1.80	2.07	1.99	**13.04**	**2.17**	**79.09**	**37.59**	**92.13**	**39.77**
YDL174C	0.87	1.22	1.35	1.30	1.42	1.74	1.63	**9.61**	**2.75**	**63.58**	**37.04**	**73.19**	**39.79**

ORF name	OD at 600 nm at sampling time points (hours)							GLUCOSE		FRUCTOSE		TOTAL SUGARS	
	0 h	20 h	27 h	44 h	66 h	93 h	113 h	120 h	146 h	120 h	146 h	120 h	146 h
YIL099W	0.89	1.40	1.52	1.45	1.62	1.89	1.91	8.27	3.32	51.79	36.50	60.06	39.81
YPL274W	1.11	1.63	1.76	1.82	1.87	2.08	2.07	11.77	2.16	78.33	37.70	90.10	39.86
YGR045C	0.94	1.26	1.44	1.53	1.65	2.16	1.85	9.55	1.71	59.35	38.20	68.90	39.91
YLR363C	0.94	1.33	1.47	1.45	1.58	1.84	1.77	10.31	2.49	67.02	37.42	77.33	39.91
YHR033W	0.94	1.25	1.38	1.51	1.59	1.92	1.86	12.93	3.04	73.23	36.92	86.17	39.96
YAR020C	0.90	1.14	1.29	1.45	1.55	1.78	1.76	11.92	2.79	66.57	37.19	78.49	39.98
YDR312W	0.96	1.36	1.57	1.66	1.77	2.03	1.97	12.65	2.08	83.05	37.90	95.70	39.98
YBR106W	0.89	1.24	1.40	1.57	1.67	1.97	1.85	10.40	2.86	61.93	37.13	72.33	39.99
YER119C	0.93	1.50	1.69	1.77	1.87	2.13	2.08	8.96	2.13	65.61	37.87	74.57	39.99
YHR194W	0.89	1.28	1.41	1.45	1.56	1.85	1.74	11.12	4.02	56.19	36.01	67.32	40.03
YPL004C	0.95	1.29	1.40	1.43	1.47	1.74	1.64	10.91	2.49	72.55	37.57	83.46	40.06
YFR048W	0.91	1.36	1.50	1.54	1.66	1.93	1.85	14.25	3.53	67.46	36.56	81.71	40.09
YPL091W	0.93	1.39	1.56	1.75	1.86	2.00	2.01	10.27	3.15	49.11	36.95	59.39	40.10
YDR216W	1.07	1.55	1.76	1.83	1.92	2.15	2.11	9.66	1.87	80.30	38.24	89.96	40.11
YPL141C	1.16	1.82	1.96	2.07	2.12	2.29	2.32	9.62	2.30	59.82	37.82	69.44	40.12
YDL161W	0.94	1.50	1.71	1.75	1.87	2.06	2.10	10.15	2.73	73.00	37.51	83.15	40.24
YER081W	0.91	1.43	1.61	1.71	1.87	2.04	2.03	14.78	3.10	22.55	37.17	37.34	40.27
YER134C	0.90	1.37	1.54	1.65	1.74	2.03	1.97	9.43	2.45	62.32	37.82	71.75	40.27
YLR395C	0.91	1.25	1.37	1.38	1.52	1.73	1.65	11.00	2.83	70.78	37.47	81.78	40.29
YHR129C	0.94	1.35	1.41	1.56	1.62	1.83	1.83	19.20	4.65	70.26	35.66	89.46	40.31
YHR142W	0.91	1.07	1.22	1.17	1.23	1.81	1.37	8.33	1.88	61.52	38.50	69.84	40.37
YDR415C	0.99	1.46	1.64	1.74	1.83	2.10	2.05	13.12	2.79	63.78	37.59	76.90	40.38
YDR296W	0.90	1.42	1.58	1.60	1.69	1.98	1.94	9.07	2.36	53.03	38.03	62.11	40.39
YPR160W	0.88	1.10	1.27	1.34	1.40	1.69	1.63	13.40	2.86	62.27	37.54	75.67	40.40
YLR262C-A	1.05	1.50	1.66	1.78	1.86	2.06	2.07	10.14	2.56	50.63	37.86	60.77	40.42
YGR252W	0.95	1.40	1.52	1.73	1.91	2.01	2.02	13.19	3.50	73.16	36.92	86.35	40.42
YCL011C	0.94	1.53	1.72	1.77	1.87	2.06	2.09	10.62	2.94	61.42	37.49	72.03	40.43
YKL079W	0.96	1.46	1.64	1.67	1.75	2.03	1.94	8.85	2.15	68.24	38.29	77.09	40.44
YHL026C	0.86	1.03	1.23	1.59	1.36	1.68	1.61	11.13	3.51	66.84	36.94	77.97	40.44
YAR009C	0.85	1.11	1.40	1.44	1.53	1.86	1.87	12.19	3.46	68.26	37.01	80.45	40.47
YMR109W	1.01	1.51	1.63	1.69	1.76	1.97	1.95	11.30	3.54	56.64	36.95	67.94	40.49
YOR356W	0.93	1.46	1.54	1.69	1.78	1.90	1.94	9.55	2.70	44.67	37.80	54.22	40.50
YMR129W	0.97	1.35	1.46	1.45	1.48	1.59	1.74	12.33	3.36	54.83	37.19	67.16	40.55
YLR185W	1.06	1.32	1.58	1.77	1.90	2.12	2.13	11.99	2.85	58.63	37.71	70.62	40.57
YER124C	0.91	1.50	1.68	1.78	1.86	2.11	2.07	9.39	2.49	61.17	38.10	70.55	40.58
YJR062C	0.86	1.29	1.46	1.54	1.68	1.98	1.90	8.62	3.47	49.35	37.15	57.97	40.61
YKR099W	0.92	1.28	1.34	1.48	1.61	1.80	1.77	12.82	3.15	72.36	37.48	85.18	40.63
YBR221W-A	0.94	1.34	1.48	1.66	1.76	2.03	2.00	14.08	2.92	75.26	37.74	89.34	40.67
YGL117W	0.92	1.45	1.62	1.74	1.88	2.05	2.04	12.21	2.11	85.74	38.56	97.94	40.67
YIL121W	0.93	1.34	1.59	1.83	1.87	1.85	1.83	13.37	3.49	68.83	37.19	82.20	40.68
YDR382W	1.06	1.26	1.51	1.71	1.84	2.13	2.09	13.75	3.10	72.87	37.65	86.62	40.75
YKR098C	0.90	1.34	1.51	1.61	1.74	1.96	1.95	9.56	3.19	51.61	37.57	61.17	40.76
YOR347C	0.98	1.55	1.63	1.80	1.89	1.98	2.03	10.09	3.21	50.28	37.57	60.37	40.77
YGL262W	0.84	1.20	1.32	1.37	1.50	1.79	1.70	9.68	2.45	61.91	38.39	71.58	40.84
YPR135W	0.91	1.29	1.42	1.52	1.62	1.91	1.86	11.32	2.84	66.52	38.01	77.84	40.84
YPR052C	0.86	1.22	1.29	1.45	1.54	1.62	1.78	9.48	2.78	59.11	38.09	68.59	40.87
YHR167W	0.88	1.13	1.44	1.39	1.56	1.88	1.90	10.57	3.61	56.33	37.28	66.90	40.88
YER080W	0.90	1.29	1.45	1.51	1.61	1.91	1.81	10.21	2.34	67.00	38.56	77.21	40.90
YDR003W	0.93	1.36	1.51	1.51	1.59	1.91	1.84	9.80	2.85	58.20	38.12	68.00	40.97
YAL012W	0.91	1.29	1.42	1.48	1.64	1.81	1.78	16.11	3.74	62.29	37.24	78.40	40.98
YNL111C	0.85	1.26	1.34	1.37	1.44	1.79	1.70	8.95	4.35	45.41	36.66	54.36	41.00
YER128W	0.88	1.41	1.59	1.70	1.79	2.06	2.00	9.35	2.23	64.15	38.79	73.50	41.02
YJL059W	0.97	1.49	1.68	1.73	1.84	2.11	2.04	9.86	2.37	69.00	38.67	78.87	41.03
YLR205C	0.95	1.47	1.61	1.67	1.76	2.07	2.03	10.22	3.24	54.63	37.80	64.85	41.04
YNL008C	0.85	1.29	1.41	1.44	1.51	1.85	1.75	12.62	3.22	59.12	37.89	71.74	41.10
YDR270W	0.92	1.24	1.46	1.50	1.57	1.87	1.77	10.39	1.71	73.11	39.42	83.51	41.13
YLR285W	1.12	1.65	1.82	1.94	1.99	2.15	2.18	10.37	3.12	50.07	38.04	60.44	41.16
YLL054C	0.99	1.52	1.70	1.76	1.86	2.09	2.04	10.06	2.39	67.95	38.79	78.01	41.18
YER152C	0.97	1.48	1.64	1.76	1.88	2.04	2.02	16.91	3.33	85.60	37.89	102.51	41.22
YPL039W	0.91	1.31	1.53	1.67	1.78	1.92	1.94	10.92	3.54	47.09	37.71	58.01	41.25
YHR098C	0.98	1.36	1.52	1.66	1.73	1.97	1.95	14.12	3.48	66.98	37.77	81.10	41.26
YHR007C-A	0.91	1.22	1.37	1.45	1.53	1.74	1.73	12.68	2.90	69.34	38.36	82.02	41.26
YJL044C	0.86	1.15	1.30	1.40	1.48	1.79	1.76	10.31	2.85	57.83	38.43	68.14	41.28
YLR254C	1.13	1.79	1.95	2.08	2.13	2.21	2.27	11.51	2.84	60.09	38.50	71.61	41.34
YMR243C	0.95	1.46	1.66	1.81	1.94	2.12	2.12	9.93	2.24	65.71	39.11	75.64	41.34
YIL047C	0.90	1.22	1.35	1.50	1.60	1.88	1.76	11.06	3.42	73.67	37.98	84.73	41.40
YMR204C	0.90	1.29	1.44	1.48	1.58	1.68	1.82	10.45	3.28	58.38	38.12	68.83	41.40
YGR289C	0.88	1.14	1.38	1.38	1.65	1.85	1.68	11.27	3.21	52.96	38.21	64.23	41.42
YMR246W	0.88	1.14	1.29	1.39	1.51	1.73	1.69	9.94	2.13	66.43	39.34	76.37	41.47
YNL096C	0.89	1.25	1.41	1.55	1.69	1.89	1.88	13.52	3.26	60.96	38.21	74.48	41.47
YGL205W	0.99	1.43	1.65	1.76	1.88	2.07	2.06	10.07	1.62	81.74	39.87	91.81	41.49
YDR482C	0.92	1.41	1.60	1.67	1.76	2.04	1.98	11.87	2.81	64.91	38.69	76.78	41.49
YKL148C	0.90	1.39	1.53	1.57	1.68	1.97	1.90	10.37	2.47	50.79	39.03	61.16	41.50
YPL022W	0.86	1.16	1.29	1.44	1.55	1.67	1.72	10.85	3.12	47.96	38.39	58.81	41.50
YLR178C	1.07	1.62	1.78	1.86	1.95	2.12	2.13	12.51	3.03	63.66	38.50	76.18	41.53
YDR229W	0.86	1.07	1.29	1.27	1.39	1.70	1.56	12.85	2.11	92.18	39.45	105.04	41.56
YDR529C	0.94	1.52	1.71	1.80	1.91	2.17	2.11	10.22	2.52	61.24	39.07	71.46	41.59
YBR251W	1.01	1.52	1.67	1.75	1.83	2.11	2.07	8.18	2.35	59.04	39.28	67.22	41.63
YDR279W	0.85	1.18	1.40	1.44	1.52	1.82	1.72	12.35	2.21	79.08	39.42	91.42	41.63
YLL055W	0.91	1.07	1.14	1.24	1.36	1.56	1.43	13.75	3.71	69.52	37.95	83.27	41.65
YBR233W	0.85	1.17	1.34	1.38	1.46	1.79	1.68	12.31	2.47	70.58	39.21	82.89	41.68
YHR001W-A	0.87	1.13	1.32	1.42	1.50	1.75	1.70	16.70	4.39	74.16	37.30	90.85	41.70
YDR321W	0.88	1.29	1.48	1.56	1.65	1.90	1.91	6.20	2.34	55.28	39.36	61.47	41.70
YIR038C	0.89	1.41	1.60	1.64	1.75	2.04	2.05	9.11	4.01	60.01	37.74	69.13	41.75
YNL300W	0.97	1.39	1.56	1.62	1.73	1.98	1.93	13.78	2.49	81.11	39.26	94.90	41.75
YDL234C	0.88	1.40	1.59	1.65	1.76	2.00	2.04	10.81	2.22	64.83	39.59	75.64	41.81
YDR459C	0.93	1.34	1.53	1.61	1.72	2.01	1.93	8.87	2.87	57.83	38.94	66.70	41.81
YDL219W	0.83	1.15	1.31	1.26	1.42	1.73	1.63	9.49	2.38	61.03	39.45	70.52	41.82
YDR541C	0.91	1.43	1.61	1.68	1.76	2.05	1.98	10.01	5.18	62.88	36.73	72.89	41.91
YKL109W	0.93	1.36	1.58	1.68	1.80	2.06	1.99	9.32	2.28	65.09	39.64	74.41	41.91
YLR307C-A	0.95	1.40	1.53	1.56	1.62	1.86	1.86	11.14	2.67	60.11	39.29	71.26	41.96
YPL267W	0.92	1.46	1.48	1.64	1.77	1.99	1.90	10.21	2.96	61.45	39.06	71.65	42.02
YIL153W	0.86	1.12	1.22	1.25	1.31	1.62	1.53	10.27	3.64	51.71	38.39	61.97	42.03
YLR447C	0.88	1.24	1.39	1.47	1.61	1.82	1.79	13.94	2.69	72.67	39.36	86.61	42.05
YDR306C	0.91	1.23	1.47	1.52	1.61	1.93	1.83	15.68	2.56	94.12	39.52	109.80	42.08
YIL071C	0.84	1.11	1.26	1.33	1.40	1.66	1.61	7.99	2.39	57.05	39.72	65.04	42.11
YKL197C	0.86	1.11	1.35	1.43	1.51	1.85	1.82	9.89	2.59	54.71	39.53	64.60	42.12
YLR218C	1.12	1.67	1.84	1.97	2.03	2.19	2.20	10.68	3.07	53.56	39.06	64.24	42.13
YLR199C	1.02	1.59	1.75	1.82	1.91	2.12	2.10	10.22	3.03	56.15	39.12	66.37	42.15
YDL184C	0.91	1.50	1.69	1.74	1.85	2.06	2.09	11.35	2.77	66.16	39.42	77.51	42.19
YHR018C	0.92	1.32	1.52	1.62	1.72	1.94	1.94	13.74	4.36	71.26	37.83	85.00	42.19
YGL010W	0.84	1.25	1.41	1.45	1.57	1.88	1.78	10.90	2.37	63.00	39.82	73.90	42.20
YDL122W	0.88	1.33	1.53	1.39	1.60	1.85	1.86	11.09	2.62	66.31	39.59	77.40	42.21
YFL031W	0.90	1.31	1.47	1.53	1.68	1.88	1.84	17.67	2.87	94.43	39.36	112.11	42.24
YJR137C	0.87	1.19	1.37	1.50	1.60	1.92	1.78	15.57	3.87	75.93	38.42	91.50	42.29
YLR189C	0.99	1.44	1.61	1.72	1.83	2.05	2.04	9.64	2.43	50.36	39.88	60.00	42.31
YPL114W	1.09	1.59	1.77	1.86	1.96	2.20	2.18	10.34	2.24	66.47	40.08	76.81	42.31
YOR243C	0.95	1.56	1.71	1.82	1.93	2.01	2.14	10.00	3.30	46.29	39.06	56.28	42.36
YKL176C	0.88	1.32	1.51	1.58	1.68	1.97	1.92	12.14	3.25	57.54	39.24	69.68	42.48
YPR159C-A	0.94	1.26	1.46	1.57	1.64	1.92	1.88	11.38	2.70	63.98	39.79	75.37	42.49
YGR201C	0.86	1.05	1.27	1.43	1.56	1.83	1.74	16.50	4.25	77.13	38.27	93.63	42.52
YNL187W	0.78	1.12	1.19	1.23	1.30	1.62	1.53	8.62	4.45	45.66	38.09	54.28	42.55
YGL158W	0.89	1.34	1.47	1.50	1.62	1.90	1.81	11.97	2.94	76.81	39.64	88.77	42.57
YPR007C	0.91	1.36	1.40	1.56	1.68	1.79	1.80	10.04	2.87	57.88	39.70	67.92	42.57
YBR297W	1.02	1.51	1.69	1.66	1.85	2.03	2.02	12.74	2.03	82.29	40.55	95.04	42.58
YGR126W	0.93	1.38	1.52	1.59	1.72	1.91	1.90	14.18	4.21	65.71	38.46	79.89	42.66
YGL126C	0.88	1.11	1.22	1.32	1.45	1.67	1.52	10.44	3.03	60.11	39.70	70.55	42.74
YPL116W	1.13	1.68	1.85	1.98	2.05	2.20	2.23	9.93	2.95	59.64	39.85	69.57	42.80
YKL114C	0.84	1.14	1.35	1.49	1.59	1.84	1.81	11.05	4.06	58.90	38.77	69.95	42.83
YGL037C	0.85	1.29	1.46	1.52	1.65	1.97	1.90	7.61	2.79	57.05	40.04	64.66	42.83
YER090W	0.86	1.34	1.53	1.63	1.75	2.04	1.96	10.14	3.09	65.18	39.74	75.33	42.83
YKL164C	0.84	1.10	1.25	1.22	1.29	1.64	1.46	10.31	2.70	78.76	40.16	89.07	42.87
YPL107W	0.92	1.35	1.49	1.67	1.78	1.95	1.92	9.14	3.52	48.59	39.35	57.72	42.88
YGL175C	0.83	1.22	1.40	1.50	1.63	1.93	1.84	11.27	2.96	61.85	39.93	73.11	42.89
YJR109C	0.98	1.33	1.49	1.48	1.56	1.84	1.70	8.82	2.26	65.40	40.63	74.22	42.89
YMR101C	0.96	1.42	1.59	1.71	1.82	2.10	2.10	10.08	2.95	54.87	39.94	64.95	42.89
YFR016C	0.95	1.38	1.57	1.62	1.71	1.97	1.91	14.30	2.05	77.92	40.88	92.21	42.92
YJR106W	0.97	1.36	1.53	1.49	1.55	1.87	1.70	11.98	2.62	79.91	40.35	91.88	42.97
YJL214W	1.01	1.57	1.75	1.80	1.89	2.16	2.08	10.55	2.36	73.92	40.67	84.47	43.03
YMR127C	0.96	1.58	1.73	1.83	1.91	1.99	2.14	9.36	3.21	48.12	39.82	57.48	43.03
YFR024C-A	0.91	1.31	1.47	1.54	1.65	1.86	1.83	13.08	2.46	75.25	40.58	88.32	43.04
YOR239W	0.88	1.31	1.45	1.51	1.61	1.69	1.85	9.96	3.15	42.87	39.91	52.84	43.06
YDR291W	0.89	1.36	1.50	1.50	1.59	1.92	1.84	10.34	2.66	63.19	40.39	73.53	43.06
YGR184C	0.91	1.22	1.37	1.50	1.64	1.83	1.75	15.33	3.68	78.28	39.47	93.61	43.15
YGL013C	0.96	1.58	1.72	1.85	1.97	2.12	2.12	11.75	2.45	73.39	40.71	85.15	43.16

ORF name	OD at 600 nm at sampling time points (hours)							GLUCOSE		FRUCTOSE		TOTAL SUGARS	
	0 h	20 h	27 h	44 h	66 h	93 h	113 h	120 h	146 h	120 h	146 h	120 h	146 h
YGR101W	0.91	1.23	1.45	1.47	1.59	2.08	1.75	17.55	2.94	90.69	40.25	108.24	43.19
YKR058W	0.89	1.33	1.48	1.57	1.70	1.92	1.87	10.99	3.82	52.06	39.38	63.04	43.20
YIL107C	0.89	1.16	1.32	1.38	1.46	1.75	1.69	11.32	3.95	61.69	39.26	73.01	43.21
YPL269W	1.10	1.59	1.75	1.79	1.90	2.16	2.12	10.18	2.44	58.14	40.79	68.32	43.23
YLL002W	0.87	1.12	1.26	1.30	1.43	1.78	1.71	15.06	4.00	60.01	39.24	75.08	43.24
YFR046C	1.04	1.69	1.86	1.99	2.09	2.24	2.24	13.62	2.74	70.25	40.52	83.88	43.26
YDL233W	0.86	1.32	1.50	1.56	1.66	1.96	2.00	8.87	2.47	62.65	40.79	71.52	43.26
YMR139W	0.88	1.21	1.35	1.43	1.55	1.78	1.73	11.44	2.08	68.67	41.19	80.12	43.27
YPR192W	0.92	1.36	1.50	1.57	1.65	1.97	1.89	9.27	3.33	48.37	39.97	57.64	43.30
YHL039W	0.88	1.14	1.32	1.40	1.53	1.72	1.68	16.33	4.22	69.18	39.09	85.52	43.30
YHR094C	0.90	1.23	1.43	1.46	1.57	1.63	1.76	14.27	3.15	89.95	40.18	104.22	43.34
YKL168C	0.96	1.28	1.44	1.41	1.49	1.81	1.66	12.05	2.69	71.42	40.65	83.47	43.34
YPR022C	1.10	1.77	1.92	2.01	2.10	2.25	2.26	11.01	2.51	74.72	40.84	85.72	43.35
YOR187W	0.88	1.30	1.48	1.57	1.65	1.75	1.91	11.94	3.83	50.93	39.53	62.87	43.36
YEL052W	0.98	1.49	1.64	1.71	1.84	2.09	2.03	11.60	3.58	65.38	39.82	76.97	43.41
YCL032W	0.96	1.40	1.60	1.70	1.83	2.07	2.06	12.89	1.84	85.16	41.66	98.05	43.49
YDL085W	0.84	1.15	1.34	1.20	1.40	1.68	1.68	10.52	2.48	63.88	41.03	74.40	43.51
YDR524C	0.93	1.41	1.58	1.67	1.77	2.03	1.97	10.44	2.55	64.29	40.96	74.73	43.51
YER064C	0.94	1.51	1.69	1.80	1.89	2.10	2.09	11.49	2.96	65.46	40.56	76.95	43.53
YDL243C	0.87	1.27	1.43	1.38	1.50	1.88	1.77	9.48	3.39	64.99	40.14	74.47	43.53
YKL046C	0.96	1.35	1.54	1.58	1.68	1.93	1.86	11.57	2.22	74.45	41.34	86.01	43.56
YER161C	0.94	1.38	1.55	1.63	1.76	1.95	1.93	15.15	3.11	86.15	40.46	101.30	43.57
YNL129W	0.74	1.05	1.13	1.17	1.23	1.56	1.45	9.75	3.84	50.75	39.76	60.50	43.60
YDR084C	0.92	1.31	1.52	1.64	1.78	1.98	1.91	13.63	3.65	75.16	39.97	88.78	43.61
YLR448W	0.89	1.17	1.38	1.50	1.64	1.83	1.82	12.03	3.15	69.06	40.48	81.10	43.62
YGL121C	0.91	1.25	1.42	1.45	1.54	1.82	1.75	15.88	2.60	87.90	41.05	103.78	43.65
YHR127W	0.86	1.09	1.29	1.38	1.47	1.80	1.76	19.09	5.45	77.13	38.24	96.22	43.69
YDR307W	0.88	1.27	1.45	1.47	1.57	1.89	1.84	9.79	2.57	57.42	41.17	67.21	43.74
YNL091W	0.86	1.22	1.34	1.36	1.44	1.76	1.69	9.53	3.85	46.83	39.91	56.36	43.76
YNL094W	0.95	1.37	1.51	1.58	1.68	1.91	1.89	16.52	3.94	67.98	39.85	84.50	43.79
YER034W	0.96	1.52	1.70	1.76	1.87	2.14	2.07	9.60	2.56	58.45	41.24	68.06	43.80
YPR057W	0.89	1.23	1.28	1.43	1.51	1.60	1.77	10.52	3.25	62.16	40.58	72.68	43.84
YDR185C	0.88	1.13	1.39	1.64	1.49	1.73	1.69	11.23	3.75	61.68	40.09	72.90	43.84
YJL146W	0.91	1.33	1.49	1.52	1.61	1.89	1.80	8.59	2.51	63.62	41.38	72.22	43.90
YDR004W	0.89	1.21	1.35	1.31	1.43	1.74	1.65	9.77	2.64	63.45	41.28	73.22	43.92
YIL024C	0.93	1.47	1.70	1.78	1.90	1.96	2.10	10.33	2.20	84.27	41.74	94.60	43.94
YJR019C	0.91	1.31	1.49	1.50	1.57	1.86	1.74	13.08	3.78	76.59	40.16	89.67	43.94
YDR099W	0.99	1.47	1.63	1.74	1.85	2.04	2.03	13.95	2.17	89.85	41.78	103.80	43.94
YKL048C	0.89	1.06	1.14	1.16	1.27	1.54	1.44	16.34	5.94	73.41	38.03	89.76	43.98
YBR194W	0.94	1.27	1.40	1.37	1.45	1.78	1.60	12.10	2.98	73.94	41.03	86.04	44.00
YBR281C	0.82	1.09	1.34	1.46	1.57	1.83	1.80	14.76	3.18	67.26	40.85	82.02	44.03
YOR307C	0.91	1.38	1.44	1.60	1.70	1.79	1.86	10.42	4.05	49.17	40.03	59.60	44.08
YOR196C	0.92	1.43	1.60	1.72	1.82	1.91	2.07	11.94	3.94	51.79	40.14	63.73	44.08
YNL191W	0.67	0.95	1.10	1.07	1.13	1.49	1.44	9.48	4.67	52.47	39.44	61.95	44.11
YMR251W-A	0.87	1.27	1.45	1.54	1.70	1.89	1.87	9.26	2.01	65.42	42.14	74.68	44.15
YGL057C	0.89	1.32	1.50	1.56	1.67	1.88	1.80	16.99	2.97	91.26	41.22	108.24	44.19
YDR205W	0.96	1.39	1.58	1.68	1.80	2.01	1.97	12.52	2.46	74.05	41.73	86.57	44.19
YLR130C	0.97	1.42	1.58	1.58	1.67	1.98	1.89	11.16	2.94	71.33	41.28	82.49	44.21
YLR368W	0.94	1.33	1.48	1.63	1.72	1.99	1.95	12.54	4.25	66.75	39.97	79.29	44.22
YKL178C	0.93	1.28	1.44	1.76	1.62	1.83	1.80	14.39	3.71	71.00	40.52	85.39	44.23
YGR183C	0.88	1.10	1.24	1.39	1.56	1.79	1.66	11.48	4.88	57.19	39.35	68.67	44.24
YJL201W	0.98	1.39	1.57	1.64	1.73	1.92	1.89	10.54	2.70	65.53	41.55	76.07	44.25
YGL028C	0.90	1.24	1.41	1.47	1.58	1.81	1.75	13.98	2.89	73.02	41.38	87.00	44.27
YBR180W	0.87	1.09	1.23	1.39	1.48	1.79	1.71	11.96	4.28	57.09	40.03	69.04	44.31
YLL046C	0.95	1.38	1.57	1.63	1.72	2.00	1.96	11.47	3.08	56.39	41.26	67.85	44.34
YER162C	0.92	1.29	1.42	1.50	1.61	1.81	1.78	14.92	2.70	84.10	41.66	99.02	44.36
YEL001C	1.02	1.65	1.82	1.91	2.00	2.23	2.18	12.95	3.69	72.38	40.67	85.33	44.36
YHR114W	0.89	1.27	1.49	1.59	1.73	1.84	1.94	10.22	2.91	69.92	41.49	80.15	44.40
YDR104C	0.94	1.27	1.71	1.38	1.51	1.85	1.73	8.72	1.69	81.90	42.71	90.62	44.40
YFL040W	0.84	1.27	1.45	1.52	1.62	1.93	1.84	11.24	3.21	67.85	41.19	79.09	44.40
YGL252C	0.94	1.34	1.55	1.61	1.72	2.06	1.93	15.01	3.34	91.26	41.11	106.26	44.45
YMR318C	0.88	1.27	1.44	1.54	1.63	1.88	1.85	10.38	4.55	56.39	39.91	66.76	44.46
YHR115C	0.91	1.33	1.50	1.61	1.73	2.11	1.90	8.88	3.15	64.32	41.32	73.21	44.47
YMR077C	1.10	1.71	1.86	1.96	2.04	2.19	2.22	10.92	3.16	53.72	41.32	64.63	44.48
YOR355W	0.88	1.24	1.40	1.47	1.59	1.84	1.80	13.57	3.13	84.80	41.36	98.37	44.49
YGR014W	0.84	1.13	1.33	1.35	1.44	1.89	1.63	16.69	2.33	67.31	42.16	84.00	44.49
YER066W	0.96	1.56	1.74	1.85	1.94	2.16	2.13	10.05	2.94	65.40	41.57	75.45	44.51
YEL003W	0.93	1.32	1.46	1.49	1.57	1.85	1.77	9.25	3.29	55.30	41.24	64.55	44.53
YBR197C	0.94	1.31	1.47	1.52	1.63	1.90	1.82	11.83	2.62	76.73	41.93	88.56	44.55
YBR164C	1.03	1.63	1.77	1.83	1.96	2.13	2.11	10.07	2.60	68.15	41.95	78.22	44.56
YCL055W	0.88	1.21	1.37	1.44	1.57	1.80	1.75	12.23	2.65	73.61	41.93	85.83	44.58
YDR285W	0.97	1.37	1.60	1.65	1.71	2.00	1.93	11.28	2.09	75.86	42.49	87.15	44.58
YAL051W	0.85	1.13	1.33	1.46	1.57	1.91	1.91	15.80	4.77	73.16	39.97	88.95	44.74
YBL008W-A	0.89	1.42	1.51	1.34	1.59	1.73	1.69	16.85	4.01	57.06	40.73	73.91	44.74
YPL224C	1.06	1.72	1.89	1.95	2.04	2.24	2.27	12.23	3.11	65.49	41.64	77.72	44.74
YDR106W	0.93	1.31	1.48	1.52	1.66	1.92	1.85	13.46	2.52	78.81	42.24	92.26	44.77
YLR425W	0.98	1.36	1.52	1.62	1.79	1.98	1.96	11.05	3.32	65.77	41.49	76.82	44.81
YAL037C-A	0.90	1.38	1.52	1.54	1.72	1.91	1.90	18.43	4.80	60.19	40.06	78.62	44.86
YDL039C	0.97	1.50	1.68	1.82	1.96	2.13	2.12	16.40	3.62	83.27	41.29	99.67	44.91
YOR191W	0.92	1.46	1.63	1.75	1.83	1.93	2.08	10.81	3.50	47.73	41.43	58.54	44.93
YPL170W	0.89	1.32	1.38	1.45	1.55	1.62	1.70	7.25	4.02	36.59	40.96	43.83	44.99
YGL053W	0.90	1.33	1.49	1.58	1.71	1.92	1.87	15.65	2.89	85.42	42.16	101.08	45.05
YPL057C	0.87	1.18	1.29	1.44	1.54	1.66	1.69	10.76	3.96	47.79	41.17	58.55	45.13
YER085C	0.92	1.39	1.57	1.67	1.78	2.04	1.98	10.67	2.90	63.49	42.25	74.16	45.15
YPL070W	0.87	1.32	1.47	1.64	1.73	1.85	1.88	10.75	3.16	49.33	41.99	60.07	45.15
YGL162W	0.85	1.33	1.49	1.56	1.69	1.97	1.88	10.44	3.17	60.72	42.00	71.16	45.17
YDR163W	0.83	1.09	1.34	1.41	1.51	1.81	1.69	10.58	2.93	71.88	42.25	82.46	45.18
YOR322C	0.96	1.51	1.55	1.72	1.81	1.94	1.97	9.51	4.20	49.31	40.99	58.82	45.19
YFR047C	0.92	1.35	1.52	1.64	1.76	1.96	1.93	15.98	3.02	86.61	42.18	102.60	45.21
YJL210W	0.94	1.40	1.58	1.57	1.67	1.90	1.82	11.42	3.15	67.78	42.10	79.19	45.25
YLR013W	0.95	1.37	1.52	1.54	1.64	1.93	1.85	8.63	2.49	62.57	42.77	71.20	45.27
YFR014C	0.95	1.48	1.63	1.79	1.89	2.05	2.05	15.87	2.59	80.96	42.69	96.83	45.28
YPL030W	0.95	1.38	1.53	1.73	1.82	1.90	1.97	10.70	3.39	53.66	41.90	64.36	45.29
YBR223C	1.12	1.77	1.90	2.01	2.04	2.18	2.21	11.21	2.56	71.97	42.75	83.18	45.31
YHR185C	0.89	1.27	1.39	1.42	1.51	1.77	1.68	9.57	4.39	50.71	40.98	60.29	45.37
YDR015C	0.96	1.57	1.76	1.70	1.90	2.10	2.02	15.67	3.05	87.35	42.37	103.02	45.42
YOR241W	0.93	1.50	1.66	1.73	1.82	1.89	2.04	12.90	5.65	56.13	39.76	69.03	45.42
YMR148W	1.04	1.59	1.72	1.83	1.91	2.05	2.14	9.95	2.78	56.60	42.63	66.55	45.42
YGR225W	0.89	1.14	1.32	1.31	1.42	1.64	1.58	15.34	3.93	87.86	41.51	103.20	45.44
YGR196C	0.90	1.27	1.40	1.57	1.70	1.89	1.82	15.08	3.28	81.49	42.22	96.57	45.50
YGR192C	0.90	1.19	1.41	1.43	1.54	1.86	1.74	15.06	3.32	87.49	42.18	102.55	45.50
YIR035C	1.00	1.43	1.61	1.67	1.75	1.65	1.96	12.05	2.28	82.27	43.24	94.31	45.52
YIR029W	0.90	1.23	1.41	1.49	1.58	2.00	1.82	8.77	2.08	70.33	43.45	79.10	45.53
YHR090C	0.99	1.37	1.47	1.58	1.63	1.91	1.90	17.18	5.43	71.80	40.14	88.98	45.57
YJR147W	0.95	1.42	1.60	1.60	1.73	1.99	1.90	10.90	2.41	71.99	43.18	82.88	45.58
YMR073C	1.10	1.74	1.86	1.96	2.02	2.17	2.21	12.47	3.84	54.34	41.78	66.81	45.62
YPL068C	0.94	1.33	1.53	1.76	1.87	1.95	2.01	11.71	4.12	56.62	41.52	68.33	45.64
YGL141W	0.87	1.29	1.42	1.45	1.58	1.87	1.77	13.57	3.49	67.76	42.16	81.33	45.65
YBR183W	1.08	1.68	1.83	1.92	2.00	2.18	2.18	11.18	2.76	74.70	42.92	85.88	45.68
YKR094C	0.94	1.27	1.49	1.61	1.76	2.01	1.99	11.01	3.12	53.38	42.60	64.39	45.72
YLL061W	0.96	1.55	1.74	1.82	1.92	2.16	2.11	10.81	2.89	70.82	42.84	81.63	45.73
YKR080W	0.92	1.27	1.46	1.57	1.76	1.96	1.94	16.71	4.86	60.68	40.93	77.39	45.80
YJR104C	0.86	1.18	1.33	1.37	1.57	1.76	1.72	10.42	4.35	52.24	41.49	62.66	45.84
YPL232W	1.11	1.67	1.83	1.90	1.99	2.19	2.19	13.58	2.95	73.72	42.99	87.30	45.93
YNL115C	0.80	1.16	1.22	1.22	1.30	1.69	1.58	8.82	3.55	52.90	42.40	61.72	45.94
YJL165C	0.96	1.53	1.72	1.70	1.79	2.08	1.98	9.77	2.96	65.48	42.99	75.25	45.95
YGR019W	0.93	1.35	1.58	1.68	1.79	1.86	2.00	13.35	3.13	86.44	42.86	99.79	45.98
YHR064C	0.91	1.20	1.36	1.56	1.67	1.97	1.91	14.85	5.49	59.22	40.52	74.07	46.02
YOR368W	0.89	1.27	1.31	1.47	1.56	1.74	1.72	11.68	3.35	47.65	42.69	59.34	46.04
YCL024W	0.99	1.49	1.64	1.80	1.89	2.13	2.10	1.12	3.15	7.96	42.90	9.08	46.05
YOR380W	0.89	1.29	1.42	1.53	1.61	1.79	1.77	12.12	3.75	53.25	42.31	65.36	46.06
YHR071W	0.86	1.25	1.40	1.47	1.60	1.90	1.76	10.19	1.91	71.40	44.19	81.59	46.10
YPR172W	1.07	1.49	1.63	1.66	1.66	1.92	1.83	11.86	3.38	68.05	42.73	79.91	46.11
YDR231C	0.86	1.09	1.31	1.30	1.41	1.69	1.56	13.26	2.57	79.57	43.57	92.83	46.14
YPL177C	1.09	1.61	1.76	1.83	1.89	2.10	2.08	11.47	3.16	73.22	42.99	84.68	46.15
YKL138C	0.94	1.22	1.32	1.31	1.49	1.68	1.66	16.59	5.54	58.24	40.61	74.83	46.15
YBR240C	0.94	1.30	1.40	1.55	1.69	1.93	1.88	10.94	3.93	56.29	42.22	67.23	46.15
YIL009C-A	0.88	1.37	1.55	1.65	1.76	1.97	1.94	10.17	4.28	59.57	41.89	69.74	46.17
YPL034W	0.94	1.46	1.67	1.76	1.86	2.12	2.08	8.39	2.83	60.07	43.34	68.47	46.17
YHR124W	0.91	1.35	1.55	1.67	1.79	2.18	1.97	13.24	3.95	82.73	42.25	95.97	46.20
YGL023C	0.90	1.44	1.59	1.63	1.75	2.03	1.94	12.77	3.36	71.83	42.86	84.61	46.22
YJR001W	0.94	1.39	1.56	1.60	1.70	1.98	1.87	11.61	2.91	74.84	43.34	86.44	46.25
YHR059W	0.89	1.10	1.27	1.24	1.34	1.87	1.52	20.23	3.78	99.33	42.48	119.56	46.26
YBR215W	0.98	1.49	1.62	1.81	1.91	2.14	2.13	14.31	4.33	63.42	42.02	77.72	46.35
YPR171W	0.97	1.49	1.67	1.66	1.79	2.06	2.06	10.03	3.19	58.01	43.22	68.04	46.40

ORF name	OD at 600 nm at sampling time points (hours)							GLUCOSE		FRUCTOSE		TOTAL SUGARS	
	0 h	20 h	27 h	44 h	66 h	93 h	113 h	120 h	146 h	120 h	146 h	120 h	146 h
YPL130W	0.90	1.20	1.36	1.37	1.47	1.73	1.64	**10.50**	**2.60**	**65.94**	**43.81**	**76.44**	**46.41**
YER044C-A	0.94	1.42	1.58	1.65	1.73	2.00	1.93	**11.54**	**4.24**	**70.41**	**42.18**	**81.95**	**46.42**
YHR008C	0.94	1.34	1.49	1.59	1.65	1.85	1.84	**17.77**	**4.53**	**80.44**	**41.90**	**98.21**	**46.43**
YPR154W	1.04	1.57	1.72	1.82	1.90	2.09	2.08	**10.75**	**3.04**	**60.91**	**43.47**	**71.66**	**46.51**
YBR246W	1.11	1.68	1.82	1.88	1.97	2.15	2.21	**10.92**	**3.03**	**71.07**	**43.49**	**81.99**	**46.52**
YKR039W	0.88	1.09	1.23	1.36	1.45	1.73	1.60	**14.88**	**3.83**	**82.05**	**42.72**	**96.94**	**46.55**
YDL175C	1.00	1.62	1.79	1.83	1.94	2.11	2.15	**7.11**	**2.78**	**51.71**	**43.79**	**58.82**	**46.57**
YNL148C	0.86	1.28	1.38	1.42	1.50	1.79	1.71	**11.35**	**5.51**	**55.04**	**41.08**	**66.39**	**46.60**
YDL130W	0.89	1.12	1.29	1.36	1.49	1.71	1.64	**17.68**	**3.55**	**87.10**	**43.05**	**104.78**	**46.60**
YKR053C	0.85	1.24	1.44	1.47	1.59	1.92	1.79	**11.74**	**2.68**	**72.44**	**43.93**	**84.18**	**46.62**
YFR055W	0.88	1.33	1.49	1.60	1.74	1.92	1.89	**16.62**	**3.19**	**83.98**	**43.60**	**100.60**	**46.79**
YPR128C	0.99	1.50	1.66	1.71	1.79	2.07	1.98	**12.14**	**3.27**	**78.07**	**43.55**	**90.21**	**46.82**
YNL046W	0.89	1.31	1.50	1.59	1.71	1.96	1.92	**12.72**	**3.13**	**73.78**	**43.70**	**86.50**	**46.83**
YDR351W	0.90	1.14	1.40	1.36	1.42	1.79	1.66	**11.82**	**2.38**	**74.42**	**44.48**	**86.24**	**46.86**
YBR228W	1.00	1.54	1.70	1.76	1.86	2.08	2.04	**10.42**	**2.75**	**70.21**	**44.14**	**80.63**	**46.89**
YPR003C	0.90	1.39	1.37	1.52	1.66	1.77	1.77	**9.09**	**3.32**	**48.20**	**43.57**	**57.29**	**46.89**
YDL213C	0.89	1.28	1.44	1.40	1.55	1.83	1.75	**9.67**	**2.95**	**64.54**	**44.08**	**74.21**	**47.03**
YGL157W	0.93	1.35	1.52	1.55	1.64	1.92	1.83	**12.54**	**2.58**	**75.65**	**44.48**	**88.20**	**47.06**
YLL016W	0.92	1.37	1.58	1.68	1.76	2.03	1.97	**11.61**	**3.08**	**72.87**	**44.00**	**84.48**	**47.07**
YDR354W	0.87	1.35	1.49	1.56	1.66	1.97	1.96	**10.27**	**3.09**	**62.84**	**44.00**	**73.11**	**47.09**
YPL036W	1.08	1.67	1.84	1.92	2.02	2.21	2.20	**8.87**	**2.91**	**59.06**	**44.19**	**67.93**	**47.09**
YLR333C	0.93	1.39	1.54	1.70	1.80	2.07	2.11	**11.63**	**4.38**	**58.42**	**42.75**	**70.05**	**47.13**
YKL116C	0.88	1.17	1.31	1.30	1.40	1.67	1.55	**11.23**	**2.92**	**81.74**	**44.25**	**92.97**	**47.16**
YKL171W	1.01	1.52	1.70	1.75	1.84	2.08	2.02	**16.44**	**2.71**	**75.75**	**44.61**	**92.19**	**47.32**
YLL051C	1.00	1.54	1.72	1.80	1.90	2.13	2.09	**12.86**	**2.83**	**82.28**	**44.50**	**95.15**	**47.33**
YDR424C	0.88	1.24	1.44	1.54	1.64	1.93	1.87	**11.92**	**3.42**	**62.69**	**43.93**	**74.60**	**47.35**
YKR076W	0.96	1.33	1.49	1.50	1.53	1.85	1.69	**10.92**	**2.81**	**67.37**	**44.54**	**78.28**	**47.36**
YIL131C	0.84	1.06	1.22	1.29	1.37	1.63	1.58	**10.73**	**4.78**	**57.28**	**42.59**	**68.02**	**47.36**
YKL020C	0.90	1.17	1.32	1.27	1.31	1.63	1.46	**11.40**	**3.07**	**75.13**	**44.38**	**86.52**	**47.45**
YBR216C	1.02	1.42	1.56	1.59	1.65	1.94	1.84	**11.74**	**3.42**	**65.49**	**44.04**	**77.23**	**47.46**
YCL002C	0.93	1.33	1.48	1.62	1.70	1.98	1.92	**11.52**	**3.45**	**61.37**	**44.04**	**72.89**	**47.49**
YGL181W	0.91	1.41	1.61	1.71	1.84	2.08	2.02	**14.95**	**3.45**	**84.74**	**44.04**	**99.70**	**47.49**
YPR188C	1.07	1.60	1.78	1.89	1.99	2.16	2.18	**14.21**	**3.08**	**83.47**	**44.54**	**97.69**	**47.63**
YFL047W	1.01	1.60	1.76	1.89	1.99	2.16	2.14	**16.84**	**2.87**	**93.71**	**44.84**	**110.55**	**47.71**
YJL191W	0.94	1.33	1.52	1.56	1.69	1.95	1.87	**11.35**	**3.32**	**69.61**	**44.44**	**80.96**	**47.76**
YPL176C	1.04	1.53	1.71	1.74	1.88	2.11	2.07	**12.86**	**3.64**	**67.25**	**44.12**	**80.11**	**47.76**
YJR152W	0.93	1.44	1.61	1.64	1.75	2.01	1.93	**12.44**	**3.38**	**80.76**	**44.40**	**93.20**	**47.78**
YJL100W	0.93	1.39	1.61	1.68	1.80	2.08	2.03	**11.86**	**2.72**	**69.45**	**45.11**	**81.31**	**47.84**
YER057C	0.95	1.49	1.66	1.76	1.87	2.13	2.08	**10.62**	**3.54**	**67.27**	**44.38**	**77.88**	**47.92**
YMR225C	1.08	1.72	1.84	1.97	2.03	2.12	2.19	**10.73**	**3.32**	**56.06**	**44.60**	**66.79**	**47.92**
YER046W	0.98	1.63	1.81	1.91	2.02	2.25	2.20	**11.51**	**3.29**	**67.02**	**44.69**	**78.52**	**47.98**
YCL005W-A	0.96	1.30	1.46	1.59	1.69	1.98	1.90	**9.35**	**4.26**	**49.58**	**43.75**	**58.93**	**48.01**
YPL144W	0.92	1.41	1.52	1.58	1.70	1.77	1.84	**13.21**	**5.02**	**33.72**	**43.01**	**46.93**	**48.04**
YBR203W	0.87	1.21	1.39	1.48	1.60	1.84	1.79	**12.78**	**2.82**	**79.81**	**45.34**	**92.59**	**48.16**
YNL042W	0.89	1.18	1.34	1.37	1.45	1.70	1.61	**11.94**	**3.79**	**67.85**	**44.38**	**79.79**	**48.17**
YGL253W	0.90	1.16	1.39	1.44	1.53	1.98	1.74	**12.01**	**2.63**	**80.65**	**45.58**	**92.65**	**48.21**
YBR201W	0.92	1.36	1.56	1.64	1.75	2.02	1.97	**12.11**	**2.78**	**77.29**	**45.56**	**89.40**	**48.34**
YFL023W	0.92	1.29	1.47	1.58	1.72	1.91	1.89	**17.85**	**3.58**	**87.20**	**44.86**	**105.04**	**48.44**
YDR281C	0.84	1.05	1.26	1.25	1.36	1.66	1.53	**12.37**	**2.39**	**87.64**	**46.07**	**100.01**	**48.46**
YAL062W	0.88	1.25	1.39	1.41	1.60	1.80	1.74	**19.04**	**5.33**	**65.06**	**43.19**	**84.10**	**48.52**
YJR090C	0.95	1.37	1.53	1.54	1.68	1.92	1.82	**10.33**	**2.93**	**77.16**	**45.64**	**87.49**	**48.57**
YFL055W	0.94	1.39	1.56	1.66	1.81	1.97	1.96	**15.28**	**3.19**	**91.00**	**45.41**	**106.28**	**48.60**
YEL054C	0.92	1.13	1.39	1.56	1.71	1.99	1.93	**12.64**	**3.78**	**68.30**	**44.86**	**80.94**	**48.64**
YJL079C	0.87	1.25	1.45	1.49	1.59	1.89	1.79	**10.58**	**3.66**	**69.49**	**45.01**	**80.07**	**48.67**
YPR098C	1.08	1.70	1.88	1.95	2.06	2.25	2.23	**12.11**	**3.40**	**73.22**	**45.35**	**85.33**	**48.75**
YGR261C	0.86	1.22	1.41	1.49	1.60	1.86	1.85	**10.20**	**3.71**	**61.13**	**45.07**	**71.32**	**48.78**
YOR266W	0.93	1.29	1.37	1.51	1.60	1.89	1.86	**12.51**	**4.18**	**51.14**	**44.62**	**63.66**	**48.81**
YER151C	0.87	1.36	1.54	1.65	1.76	2.05	1.98	**10.55**	**3.44**	**63.78**	**45.39**	**74.33**	**48.83**
YKL015W	0.85	1.17	1.40	1.48	1.59	1.86	1.74	**16.89**	**4.41**	**81.26**	**44.45**	**98.14**	**48.86**
YCL019W	0.94	1.32	1.46	1.62	1.71	2.01	1.94	**10.92**	**4.76**	**53.47**	**44.19**	**64.40**	**48.95**
YJL157C	0.95	1.55	1.76	1.85	1.95	2.12	2.09	**10.93**	**4.15**	**64.54**	**44.84**	**75.47**	**48.99**
YPR156C	0.96	1.33	1.47	1.45	1.51	1.83	1.67	**7.91**	**3.09**	**48.14**	**45.94**	**56.05**	**49.03**
YNL195C	0.90	1.24	1.40	1.51	1.59	1.88	1.85	**9.16**	**4.46**	**48.28**	**44.57**	**57.43**	**49.03**
YBR262C	1.02	1.55	1.70	1.77	1.89	2.10	2.14	**11.05**	**2.95**	**66.14**	**46.08**	**77.19**	**49.03**
YDR134C	0.98	1.44	1.63	1.75	1.89	2.09	2.06	**13.56**	**4.64**	**77.24**	**44.48**	**90.80**	**49.11**
YGR041W	0.96	1.27	1.50	1.58	1.68	2.06	1.89	**13.25**	**3.51**	**71.44**	**45.62**	**84.70**	**49.13**
YGR023W	0.92	1.27	1.49	1.52	1.63	2.00	1.82	**14.40**	**2.79**	**80.35**	**46.34**	**94.75**	**49.13**
YGR067C	0.99	1.45	1.67	1.70	1.81	2.02	1.97	**14.93**	**3.30**	**80.18**	**45.83**	**95.11**	**49.13**
YGL078C	0.93	1.26	1.44	1.57	1.69	1.90	1.84	**16.43**	**3.28**	**88.47**	**45.91**	**104.89**	**49.20**
YHR136C	0.88	1.27	1.49	1.52	1.65	1.64	1.84	**14.70**	**4.02**	**86.89**	**45.18**	**101.59**	**49.20**
YIL070C	0.85	1.07	1.24	1.32	1.42	1.67	1.62	**10.50**	**4.55**	**55.96**	**44.69**	**66.46**	**49.24**
YLL019C	0.94	1.35	1.53	1.60	1.69	2.01	1.88	**13.00**	**3.69**	**71.48**	**45.56**	**84.48**	**49.25**
YGR055W	0.93	1.31	1.49	1.56	1.69	2.09	1.88	**12.79**	**3.26**	**79.79**	**46.02**	**92.58**	**49.28**
YPL265W	1.07	1.72	1.88	1.96	2.06	2.22	2.22	**10.24**	**3.65**	**57.34**	**45.64**	**67.58**	**49.29**
YBR259W	1.04	1.55	1.72	1.83	1.90	2.15	2.11	**11.07**	**3.26**	**68.13**	**46.10**	**79.20**	**49.37**
YBR255W	1.00	1.48	1.64	1.70	1.76	2.03	1.98	**13.27**	**3.83**	**64.87**	**45.58**	**78.14**	**49.41**
YDR316W	0.81	1.02	1.22	1.22	1.30	1.68	1.60	**11.22**	**2.88**	**69.30**	**46.59**	**80.52**	**49.47**
YER060W-A	0.88	1.25	1.40	1.48	1.60	1.86	1.78	**18.24**	**5.46**	**74.36**	**44.01**	**92.60**	**49.47**
YDR179C	0.84	1.15	1.33	1.38	1.53	1.78	1.70	**10.59**	**3.68**	**68.11**	**45.83**	**78.70**	**49.51**
YOR311C	1.02	1.60	1.64	1.82	1.91	2.02	2.06	**13.43**	**4.31**	**54.59**	**45.24**	**68.03**	**49.55**
YIL146C	0.92	1.26	1.41	1.57	1.72	1.91	1.83	**17.34**	**5.25**	**83.61**	**44.30**	**100.96**	**49.55**
YDR009W	0.85	1.12	1.26	1.22	1.37	1.67	1.58	**9.87**	**3.07**	**65.48**	**46.48**	**75.34**	**49.55**
YCL010C	0.90	1.42	1.58	1.68	1.81	2.06	2.09	**8.67**	**3.99**	**47.46**	**45.58**	**56.13**	**49.57**
YMR145C	1.02	1.40	1.51	1.54	1.58	1.75	1.80	**11.92**	**4.12**	**50.17**	**45.47**	**62.09**	**49.59**
YHR052W	1.04	1.56	1.68	1.83	1.91	2.17	2.15	**20.02**	**6.97**	**78.54**	**42.75**	**98.55**	**49.72**
YFL042C	0.93	1.43	1.59	1.70	1.81	1.98	1.97	**19.75**	**3.32**	**94.41**	**46.48**	**114.17**	**49.80**
YDR169C	0.89	1.15	1.30	1.32	1.42	1.63	1.55	**18.85**	**3.96**	**95.18**	**45.85**	**114.03**	**49.81**
YDR372C	0.88	1.21	1.38	1.38	1.48	1.82	1.74	**12.58**	**3.22**	**74.45**	**46.61**	**87.02**	**49.83**
YHR113W	0.90	1.17	1.34	1.55	1.65	1.95	1.90	**18.38**	**5.32**	**79.05**	**44.62**	**97.43**	**49.95**
YOR293C-A	0.91	1.36	1.55	1.64	1.74	1.85	1.90	**13.14**	**5.53**	**56.64**	**44.51**	**69.79**	**50.04**
YFR031C-A	0.94	1.33	1.54	1.67	1.82	2.02	1.99	**18.34**	**3.52**	**94.43**	**46.53**	**112.77**	**50.04**
YLR312C	0.97	1.54	1.68	1.74	1.83	2.03	2.06	**13.34**	**3.71**	**53.62**	**46.35**	**66.95**	**50.06**
YJR058C	0.95	1.38	1.58	1.66	1.74	1.97	1.93	**12.45**	**3.44**	**72.38**	**46.63**	**84.82**	**50.08**
YDR488C	0.95	1.40	1.57	1.63	1.71	1.98	1.91	**13.60**	**3.42**	**74.23**	**46.69**	**87.83**	**50.11**
YJL187C	0.99	1.41	1.59	1.62	1.72	2.01	1.91	**9.98**	**3.09**	**71.72**	**47.03**	**81.69**	**50.12**
YHR202W	0.86	1.12	1.28	1.34	1.41	1.66	1.61	**13.16**	**4.17**	**71.52**	**46.06**	**84.68**	**50.23**
YBR227C	1.01	1.50	1.66	1.73	1.79	2.06	1.99	**13.00**	**3.72**	**72.38**	**46.63**	**85.38**	**50.35**
YPL086C	0.91	1.29	1.46	1.66	1.77	1.91	1.93	**11.94**	**4.63**	**57.13**	**45.83**	**69.07**	**50.46**
YKR019C	0.93	1.28	1.47	1.52	1.59	1.88	1.78	**9.98**	**2.43**	**69.32**	**48.06**	**79.29**	**50.49**
YLR062C	0.90	1.36	1.56	1.64	1.76	1.99	1.93	**12.84**	**4.21**	**76.92**	**46.36**	**89.76**	**50.57**
YGR032W	0.99	1.33	1.54	1.58	1.66	1.83	1.83	**12.18**	**4.21**	**70.33**	**46.40**	**82.52**	**50.61**
YMR176W	1.04	1.54	1.66	1.74	1.81	1.91	2.06	**11.58**	**4.15**	**57.91**	**46.62**	**69.49**	**50.76**
YDR277C	0.93	1.29	1.52	1.56	1.63	1.94	1.89	**13.72**	**3.20**	**83.37**	**47.74**	**97.09**	**50.94**
YGL194C	0.91	1.31	1.49	1.61	1.72	1.94	1.90	**16.41**	**2.92**	**86.07**	**48.06**	**102.47**	**50.99**
YMR275C	0.90	1.38	1.55	1.56	1.67	1.96	1.87	**11.70**	**3.28**	**70.80**	**47.70**	**82.50**	**50.99**
YDR309C	0.89	1.23	1.44	1.47	1.55	1.83	1.74	**14.88**	**2.82**	**95.18**	**48.28**	**110.05**	**51.10**
YDR218C	0.95	1.33	1.57	1.62	1.75	2.01	1.92	**16.79**	**3.23**	**93.29**	**47.99**	**110.07**	**51.22**
YNL165W	0.81	1.11	1.18	1.21	1.27	1.56	1.48	**10.94**	**6.07**	**53.97**	**45.15**	**64.91**	**51.22**
YGR109C	0.89	1.22	1.45	1.53	1.65	1.80	1.85	**15.33**	**4.29**	**79.89**	**47.01**	**95.22**	**51.30**
YLR187W	0.97	1.49	1.66	1.66	1.80	2.04	1.96	**11.89**	**3.43**	**66.08**	**47.87**	**77.97**	**51.30**
YLR266C	1.10	1.50	1.64	1.74	1.78	1.93	1.93	**11.41**	**4.65**	**53.31**	**46.70**	**64.72**	**51.35**
YNL080W	0.83	1.18	1.25	1.27	1.32	1.67	1.54	**9.63**	**5.31**	**47.42**	**46.12**	**57.05**	**51.43**
YGL089C	0.92	1.38	1.54	1.65	1.76	1.93	1.90	**15.06**	**3.40**	**88.19**	**48.04**	**103.25**	**51.44**
YGR043C	0.95	1.28	1.49	1.53	1.64	2.08	1.83	**15.87**	**3.61**	**81.33**	**47.83**	**97.20**	**51.45**
YKR001C	0.92	1.22	1.38	1.51	1.59	1.89	1.77	**15.56**	**4.77**	**82.31**	**46.70**	**97.86**	**51.47**
YDR330W	0.99	1.40	1.60	1.60	1.71	1.97	1.90	**14.24**	**3.42**	**91.91**	**48.06**	**106.15**	**51.48**
YDR178W	0.88	1.22	1.41	1.46	1.60	1.83	1.77	**10.97**	**3.45**	**59.67**	**48.04**	**70.64**	**51.48**
YDL121C	0.89	1.32	1.51	1.38	1.53	1.82	1.80	**10.21**	**3.22**	**64.85**	**48.32**	**75.06**	**51.54**
YPR054W	1.14	1.66	1.80	1.89	1.93	2.13	2.12	**8.89**	**3.55**	**51.34**	**48.11**	**60.23**	**51.65**
YPR006W	0.98	1.44	1.61	1.68	1.76	2.04	1.99	**11.53**	**2.89**	**79.94**	**48.86**	**91.48**	**51.75**
YFR038W	0.86	1.19	1.34	1.42	1.55	1.74	1.71	**15.34**	**3.68**	**82.42**	**48.08**	**97.77**	**51.76**
YDL112W	0.88	1.38	1.58	1.50	1.62	1.94	1.96	**9.04**	**3.16**	**54.48**	**48.63**	**63.52**	**51.79**
YJR053W	0.90	1.22	1.40	1.42	1.53	1.80	1.70	**11.80**	**3.72**	**77.18**	**48.13**	**88.98**	**51.84**
YGR153W	0.97	1.42	1.60	1.76	1.94	2.15	2.07	**9.99**	**5.05**	**53.11**	**46.82**	**63.10**	**51.87**
YGR222W	0.93	1.19	1.36	1.46	1.56	1.83	1.76	**14.26**	**5.16**	**65.32**	**46.71**	**79.58**	**51.87**
YPR124W	0.96	1.40	1.56	1.58	1.66	1.94	1.86	**15.13**	**3.70**	**78.76**	**48.19**	**93.89**	**51.89**
YLL052C	0.98	1.49	1.68	1.76	1.86	2.12	2.05	**10.09**	**3.59**	**73.10**	**48.40**	**83.19**	**51.99**
YKR067W	0.95	1.29	1.48	1.51	1.64	1.91	1.82	**14.17**	**3.96**	**80.14**	**48.06**	**94.31**	**52.02**
YPR024W	0.85	1.20	1.36	1.36	1.49	1.69	1.65	**16.85**	**7.21**	**63.24**	**44.86**	**80.09**	**52.07**
YDR261W-A	0.90	1.17	1.39	1.46	1.53	1.83	1.75	**20.39**	**6.49**	**72.29**	**45.59**	**92.67**	**52.08**
YFR056C	0.89	1.35	1.52	1.66	1.79	1.97	1.95	**16.65**	**3.63**	**91.39**	**48.48**	**108.04**	**52.11**
YIL034C	0.88	1.23	1.43	1.47	1.56	1.82	1.77	**11.40**	**3.39**	**74.27**	**48.76**	**85.67**	**52.15**
YDR332W	0.99	1.44	1.66	1.74	1.84	2.10	2.10	**9.44**	**2.75**	**62.91**	**49.41**	**72.34**	**52.16**
YDR283C	0.97	1.32	1.56	1.71	1.85	1.94	1.87	**15.77**	**3.42**	**92.23**	**48.82**	**108.00**	**52.25**
YDL119C	0.91	1.38	1.57	1.42	1.57	1.86	1.83	**11.03**	**3.38**	**62.34**	**48.86**	**73.37**	**52.25**

ORF name	OD at 600 nm at sampling time points (hours)							GLUCOSE		FRUCTOSE		TOTAL SUGARS	
	0 h	20 h	27 h	44 h	66 h	93 h	113 h	120 h	146 h	120 h	146 h	120 h	146 h
YOR216C	0.98	1.47	1.65	1.72	1.86	2.11	2.08	16.50	4.11	93.32	48.23	109.82	52.34
YLR204W	1.00	1.53	1.65	1.74	1.84	2.02	2.02	11.16	4.02	53.17	48.43	64.33	52.45
YMR075W	1.09	1.58	1.73	1.83	1.89	2.11	2.11	11.79	4.44	59.41	48.02	71.20	52.46
YBR176W	1.10	1.70	1.85	1.95	2.01	2.18	2.17	11.12	4.17	60.07	48.29	71.20	52.47
YJL098W	0.88	1.19	1.40	1.41	1.51	1.83	1.70	10.78	4.14	66.65	48.46	77.43	52.61
YNL167C	0.84	1.11	1.25	1.34	1.47	1.68	1.65	14.20	5.50	58.93	47.14	73.13	52.64
YLR214W	0.86	1.24	1.43	1.45	1.59	1.85	1.75	12.38	3.94	72.28	48.78	84.66	52.72
YBR188C	1.04	1.54	1.70	1.78	1.90	2.15	2.10	12.82	3.91	77.06	48.88	89.87	52.79
YHR138C	0.92	1.19	1.28	1.43	1.49	1.78	1.79	14.68	6.39	59.16	46.41	73.84	52.80
YFL052W	0.93	1.32	1.47	1.58	1.70	1.89	1.86	17.08	4.45	86.75	48.46	103.83	52.91
YKL056C	0.92	1.23	1.43	1.50	1.55	1.84	1.75	12.03	4.46	67.58	48.55	79.61	53.00
YDR538W	0.92	1.41	1.63	1.72	1.82	2.08	2.05	13.81	3.96	68.65	49.18	82.46	53.14
YJL095W	0.89	1.35	1.55	1.59	1.69	2.00	1.89	11.48	3.34	68.34	49.85	79.82	53.20
YOL108C	0.95	1.38	1.55	1.60	1.64	1.92	1.83	15.93	4.45	83.47	48.80	99.41	53.25
YHR089C	0.92	1.23	1.35	1.48	1.56	1.89	1.88	17.11	6.11	66.49	47.23	83.60	53.34
YBR230C	1.08	1.65	1.80	1.89	1.95	2.11	2.13	13.10	3.90	71.34	49.52	84.44	53.42
YPR167C	0.91	1.33	1.43	1.71	1.77	1.99	1.96	14.70	4.75	70.42	48.70	85.12	53.44
YMR205C	0.88	1.24	1.37	1.33	1.44	1.71	1.60	19.19	5.60	96.03	47.85	115.22	53.46
YJL099W	0.94	1.44	1.65	1.75	1.87	2.06	2.05	12.43	4.31	68.95	49.18	81.38	53.49
YMR181C	0.98	1.40	1.54	1.62	1.66	1.76	1.91	13.54	4.26	56.95	49.28	70.49	53.54
YLR388W	0.95	1.14	1.41	1.69	1.85	2.13	2.11	16.00	7.28	75.59	46.38	91.59	53.66
YDR036C	0.91	1.23	1.39	1.47	1.60	1.82	1.77	14.25	4.03	87.76	49.80	102.01	53.84
YLR021W	0.93	1.40	1.56	1.61	1.72	1.97	1.93	12.71	4.67	59.82	49.25	72.53	53.92
YIR024C	0.93	1.39	1.53	1.57	1.64	1.91	1.87	14.12	6.07	76.43	47.85	90.55	53.93
YJL012C	0.97	1.42	1.65	1.77	1.87	2.12	2.08	12.66	3.64	84.53	50.38	97.19	54.02
YKR072C	1.01	1.43	1.60	1.65	1.73	1.98	1.91	13.45	3.95	82.01	50.11	95.46	54.06
YDR129C	1.04	1.54	1.68	1.78	1.90	2.09	2.08	12.40	4.29	93.36	50.12	105.76	54.41
YPL239W	0.86	1.22	1.27	1.38	1.48	1.55	1.72	14.60	6.10	64.01	48.37	78.61	54.47
YGL096W	0.94	1.41	1.57	1.72	1.84	2.02	2.01	17.73	3.91	95.06	50.78	112.79	54.69
YOR268C	0.88	1.30	1.40	1.54	1.64	1.93	1.88	14.10	6.12	50.93	48.58	65.02	54.70
YKL175W	0.95	1.34	1.54	1.62	1.71	1.97	1.88	12.01	3.71	74.41	50.99	86.42	54.70
YNL133C	0.68	0.72	0.82	0.92	0.97	1.25	1.16	12.37	5.96	56.58	48.75	68.95	54.71
YHR112C	0.88	1.37	1.59	1.69	1.82	1.84	2.01	15.32	4.10	87.65	50.61	102.96	54.72
YOR189W	0.95	1.47	1.63	1.72	1.81	1.89	2.04	13.95	5.88	63.93	48.87	77.88	54.75
YBR101C	1.00	1.43	1.57	1.72	1.83	2.06	2.02	13.43	5.35	68.80	49.43	82.23	54.78
YBR146W	0.90	1.09	1.25	1.43	1.54	1.87	1.78	12.03	5.69	56.86	49.16	68.89	54.86
YDR096W	1.02	1.46	1.64	1.76	1.87	2.05	2.04	18.52	3.92	87.13	51.10	105.65	55.02
YOR332W	0.94	1.58	1.73	1.84	1.90	2.01	2.03	14.41	5.18	58.03	49.84	72.44	55.02
YDR364C	0.85	1.18	1.35	1.37	1.44	1.83	1.73	14.45	3.98	77.12	51.31	91.56	55.29
YHR043C	0.92	1.32	1.54	1.56	1.68	2.03	1.87	15.50	4.84	89.77	50.49	105.27	55.33
YDR261C	0.98	1.39	1.61	1.69	1.82	2.04	1.99	14.95	3.27	83.62	52.18	98.57	55.45
YDR123C	0.99	1.43	1.63	1.75	1.86	2.05	2.04	22.53	4.78	97.68	50.69	120.20	55.46
YML230W	0.96	1.25	1.43	1.56	1.66	1.75	1.94	13.94	5.13	59.45	50.34	73.39	55.47
YIR039C	0.96	1.51	1.72	1.84	1.96	2.13	2.14	12.71	3.23	78.91	52.47	91.62	55.70
YIL023C	0.89	1.27	1.48	1.53	1.63	1.97	1.83	10.63	3.36	75.81	52.36	86.44	55.72
YDL211C	0.89	1.20	1.32	1.28	1.41	1.74	1.65	10.88	4.65	62.88	51.08	73.76	55.73
YMR140W	1.02	1.51	1.63	1.72	1.77	1.84	1.97	18.13	5.42	65.69	50.42	83.82	55.85
YOR293W	0.87	1.00	1.14	1.37	1.67	1.83	1.78	17.56	6.92	65.40	48.93	82.95	55.85
YMR162C	1.02	1.55	1.68	1.77	1.82	1.93	2.05	11.44	4.54	54.32	51.33	65.76	55.87
YHR123W	0.91	1.28	1.43	1.51	1.63	2.03	1.80	9.72	3.42	73.26	52.49	82.97	55.91
YKL051W	0.91	1.24	1.43	1.44	1.51	1.84	1.70	11.30	3.99	67.82	52.28	79.12	56.27
YDR276C	0.98	1.34	1.58	1.65	1.75	2.04	1.98	14.56	3.85	90.61	52.48	105.17	56.33
YDR297W	0.91	1.25	1.49	1.53	1.63	1.94	1.85	12.69	3.11	78.56	53.29	91.25	56.40
YAL055W	0.92	1.28	1.50	1.63	1.83	1.98	1.96	17.37	5.55	62.75	50.89	80.12	56.45
YBR301W	0.94	1.12	1.27	1.47	1.58	1.89	1.84	11.88	4.50	57.47	52.03	69.35	56.53
YER164W	0.93	1.37	1.53	1.64	1.80	1.99	1.97	18.93	4.86	90.18	51.79	109.11	56.65
YHR126C	0.91	1.24	1.41	1.46	1.54	2.06	1.73	16.49	4.76	90.79	51.96	107.28	56.72
YPR155C	0.92	0.96	1.01	1.03	1.04	1.32	1.21	18.89	6.30	72.26	50.45	91.15	56.75
YGR122W	0.96	1.50	1.65	1.71	1.81	2.03	1.99	15.21	5.88	66.49	50.91	81.70	56.78
YDR336W	0.96	1.35	1.62	1.64	1.72	2.01	1.96	12.30	3.79	66.37	52.99	78.67	56.78
YOR276W	0.93	1.48	1.57	1.70	1.78	1.86	1.94	14.00	6.38	55.78	50.48	69.78	56.87
YDR333C	0.92	1.19	1.41	1.43	1.50	1.84	1.73	18.16	4.03	104.06	52.92	122.21	56.95
YCL001W	0.94	1.08	1.29	1.52	1.63	1.93	1.88	15.19	6.32	62.85	50.69	78.05	57.01
YDR284C	0.94	1.31	1.52	1.56	1.66	1.94	1.87	10.69	3.95	83.76	53.19	94.45	57.14
YKR093W	0.88	1.20	1.27	1.44	1.57	1.76	1.72	16.16	6.38	73.13	50.98	89.29	57.36
YGR238C	0.89	1.13	1.32	1.32	1.42	1.87	1.60	13.43	4.54	75.97	53.06	89.39	57.59
YGL192W	0.89	1.18	1.33	1.42	1.53	1.75	1.69	14.42	4.27	82.62	53.35	97.04	57.63
YGR230W	0.91	1.19	1.38	1.38	1.47	1.83	1.66	15.66	4.57	88.21	53.23	103.87	57.80
YHR137W	0.95	1.33	1.42	1.57	1.66	1.93	1.98	19.46	7.99	70.75	49.81	90.21	57.80
YLR332W	0.94	1.23	1.35	1.47	1.52	1.83	1.80	24.32	7.74	89.38	50.13	113.70	57.88
YHR061C	0.89	1.24	1.47	1.53	1.66	1.84	1.85	15.54	4.46	91.02	53.56	106.56	58.03
YOR269W	0.96	1.41	1.51	1.64	1.72	1.81	1.91	14.06	5.41	56.35	52.62	70.40	58.03
YDR305C	0.90	1.30	1.47	1.49	1.56	1.89	1.83	14.12	4.67	72.28	53.37	86.40	58.05
YER075C	0.94	1.35	1.52	1.63	1.77	1.91	1.89	23.75	8.33	22.38	49.75	46.12	58.08
YGR224W	0.95	1.31	1.51	1.50	1.61	2.12	1.78	14.33	4.57	84.59	53.52	98.92	58.09
YKL222C	0.92	1.34	1.53	1.57	1.64	1.91	1.82	10.88	3.22	73.67	54.95	84.55	58.17
YGR059W	0.88	1.25	1.48	1.50	1.61	1.89	1.80	12.65	4.74	77.57	53.46	90.22	58.20
YMR182C	0.92	1.35	1.50	1.50	1.59	1.90	1.78	14.28	5.35	79.40	53.39	93.68	58.75
YMR189W	0.98	1.47	1.61	1.73	1.81	1.90	2.02	13.01	5.05	57.17	53.97	70.18	59.01
YGR044C	0.92	1.22	1.46	1.57	1.69	2.01	1.90	14.93	4.38	81.54	54.68	96.48	59.06
YBR276C	0.86	1.02	1.14	1.28	1.37	1.66	1.59	16.26	8.04	65.39	51.04	81.65	59.08
YDR345C	0.96	1.29	1.52	1.57	1.64	1.95	1.86	16.40	4.25	104.23	54.96	120.63	59.21
YDR142C	0.94	1.29	1.46	1.56	1.69	1.91	1.86	15.40	3.57	96.26	55.67	111.65	59.24
YIL039W	0.89	1.03	1.22	1.24	1.32	1.97	1.48	14.19	4.35	78.60	54.93	92.79	59.28
YDR329C	0.99	1.35	1.57	1.60	1.66	1.96	1.85	16.08	4.14	85.16	55.42	101.25	59.56
YPL090C	1.01	1.23	1.52	1.72	1.84	2.09	2.05	17.37	5.64	72.59	54.13	89.96	59.77
YDR184C	0.99	1.27	1.62	1.81	1.96	2.18	2.18	16.68	6.15	87.91	53.88	104.59	60.02
YGR170W	0.88	1.13	1.26	1.39	1.53	1.74	1.62	20.48	7.51	73.00	52.53	93.48	60.04
YPL247C	0.91	1.39	1.39	1.56	1.69	1.81	1.85	14.36	6.98	65.67	53.06	80.04	60.04
YHR006W	0.91	1.31	1.46	1.55	1.70	1.85	1.88	10.89	3.64	75.79	56.41	86.68	60.05
YDR092W	0.99	1.41	1.58	1.68	1.81	2.00	1.97	19.38	4.57	101.63	55.84	121.01	60.41
YDR119W	0.91	1.26	1.44	1.52	1.65	1.86	1.82	15.99	4.60	93.38	55.86	109.37	60.46
YDL012C	1.01	1.31	1.46	1.51	1.64	1.84	1.78	15.75	5.24	86.54	55.37	102.28	60.61
YLR200W	1.03	1.48	1.62	1.63	1.68	1.93	1.90	16.57	6.50	68.36	54.35	84.93	60.85
YER116C	0.96	1.30	1.51	1.63	1.75	1.99	1.97	17.34	4.88	75.34	56.05	92.68	60.93
YPL179W	1.13	1.52	1.67	1.75	1.80	2.06	2.03	16.02	6.11	69.71	54.83	85.73	60.93
YCR106W	0.94	1.43	1.61	1.72	1.88	2.09	2.06	14.39	5.64	71.74	55.35	86.14	60.99
YDR213W	0.98	1.50	1.71	1.84	1.93	2.14	2.12	18.26	4.40	94.19	56.60	112.46	61.00
YHR109W	0.91	1.26	1.48	1.53	1.64	1.93	1.84	13.48	4.29	82.52	56.74	96.00	61.04
YIL014C-A	0.95	1.33	1.50	1.55	1.64	1.92	1.83	10.77	3.99	76.08	57.06	86.85	61.05
YDR262W	0.99	1.42	1.61	1.69	1.81	2.03	2.00	12.29	4.11	76.45	57.14	88.74	61.25
YDR265W	0.91	1.23	1.48	1.56	1.63	1.89	1.83	19.53	4.61	101.73	56.70	121.26	61.31
YHR158C	0.90	1.24	1.47	1.55	1.66	1.19	1.86	11.55	5.00	71.33	56.55	82.88	61.55
YGR266W	0.88	1.23	1.46	1.55	1.67	1.97	1.87	13.86	4.89	81.15	56.70	95.02	61.59
YNL076W	0.86	1.24	1.36	1.38	1.47	1.80	1.70	11.45	6.24	53.81	55.40	65.27	61.64
YBR260C	0.93	1.31	1.47	1.66	1.75	2.04	2.00	10.62	4.26	52.81	57.57	63.42	61.83
YIR025W	0.92	1.42	1.58	1.63	1.73	1.99	1.94	14.51	8.88	67.54	53.12	82.06	62.00
YIL134C-A	0.84	1.11	1.26	1.29	1.36	1.63	1.55	14.25	7.97	66.55	54.11	80.80	62.08
YGR129W	0.93	1.36	1.63	1.73	1.85	1.95	2.04	15.23	4.78	82.97	57.33	98.19	62.11
YHR156C	0.90	1.11	1.30	1.30	1.42	1.97	1.58	14.60	4.69	86.93	57.61	101.53	62.30
YHR066W	0.92	1.10	1.36	1.45	1.58	1.16	1.78	14.91	5.33	83.34	57.10	98.24	62.43
YHR103W	0.92	1.25	1.44	1.45	1.57	2.01	1.75	13.55	4.34	81.60	58.22	95.15	62.56
YDR210W	0.98	1.43	1.65	1.78	1.89	2.14	2.13	13.36	3.32	89.88	59.40	103.24	62.72
YDR204W	0.96	1.37	1.57	1.66	1.79	2.00	1.95	14.57	5.38	83.72	57.43	98.28	62.81
YIL088C	0.87	1.21	1.33	1.35	1.42	1.74	1.63	14.99	8.50	64.66	54.66	79.65	63.16
YBR267W	1.00	1.48	1.67	1.76	1.95	2.10	2.14	16.59	5.35	84.23	57.97	100.82	63.32
YNL037C	0.83	1.11	1.28	1.28	1.37	1.66	1.53	20.48	7.66	85.91	55.90	106.39	63.56
YLR211C	0.97	1.48	1.65	1.74	1.81	2.03	2.00	14.90	6.51	61.83	57.36	76.73	63.87
YDL198C	0.88	1.43	1.61	1.60	1.69	1.98	1.97	15.84	5.96	77.45	58.05	93.29	64.01
YIL011W	0.89	1.17	1.33	1.43	1.56	1.92	1.74	15.05	5.08	84.47	59.63	99.52	64.71
YHR178W	0.86	1.27	1.45	1.49	1.62	1.91	1.83	13.97	4.27	87.20	60.45	101.17	64.72
YPL181W	0.92	1.22	1.38	1.35	1.44	1.71	1.59	16.24	5.75	80.39	59.02	96.64	64.77
YBR239C	0.98	1.45	1.62	1.82	1.91	2.15	2.12	18.33	8.01	58.37	57.16	76.70	65.17
YJR107W	0.87	1.00	1.08	1.04	1.25	1.41	1.35	20.22	10.64	65.19	54.64	85.41	65.28
YHR132C	0.84	1.04	1.21	1.18	1.26	1.67	1.44	10.56	4.14	72.50	61.61	83.06	65.76
YDR485C	0.89	1.32	1.50	1.60	1.70	1.92	1.89	18.26	5.96	76.40	59.95	94.65	65.91
YDR253C	0.98	1.42	1.64	1.74	1.85	2.07	2.02	15.54	4.65	87.47	61.85	103.01	66.50
YDL022W	0.92	1.29	1.46	1.55	1.69	1.92	1.87	21.89	7.29	91.62	59.32	113.50	66.61
YNL086W	0.82	1.13	1.21	1.20	1.26	1.63	1.49	13.39	8.11	56.74	58.62	70.13	66.74
YDR259C	0.88	1.23	1.45	1.53	1.62	1.88	1.83	25.93	8.14	88.61	58.59	114.54	66.74
YMR143W	1.08	1.42	1.60	1.74	1.86	2.00	2.10	16.14	6.05	70.17	60.91	86.31	66.95
YKR007W	0.87	1.23	1.39	1.47	1.60	1.83	1.79	19.31	7.55	74.15	59.50	93.46	67.05
YJR073C	0.99	1.47	1.64	1.72	1.80	2.01	1.95	16.65	9.45	70.72	57.73	87.37	67.18
YDR144C	0.99	1.49	1.69	1.81	1.93	2.12	2.08	17.08	4.76	89.95	62.59	107.03	67.35
YGR144W	0.95	1.42	1.57	1.67	1.80	2.16	1.96	14.07	4.63	93.71	62.96	107.78	67.59

ORF name	OD at 600 nm at sampling time points (hours)							GLUCOSE		FRUCTOSE		TOTAL SUGARS	
	0 h	20 h	27 h	44 h	66 h	93 h	113 h	120 h	146 h	120 h	146 h	120 h	146 h
YJR043C	0.95	1.44	1.57	1.58	1.70	1.95	1.93	18.32	10.91	67.62	57.12	85.94	68.03
YHL031C	0.93	1.23	1.37	1.44	1.55	1.77	1.74	23.57	9.15	79.72	59.15	103.29	68.30
YFL021W	0.92	1.35	1.50	1.58	1.68	1.87	1.85	23.79	7.40	100.60	61.25	124.38	68.66
YPR174C	0.93	1.21	1.32	1.43	1.54	1.83	1.75	16.22	10.18	71.29	58.62	87.50	68.81
YHR181W	0.83	1.07	1.28	1.34	1.45	1.88	1.66	14.33	5.68	88.99	63.19	103.32	68.87
YMR291W	0.91	1.37	1.56	1.60	1.71	2.00	1.91	8.26	1.69	110.80	67.28	119.05	68.97
YJL159W	0.91	1.31	1.53	1.59	1.71	2.02	1.88	14.80	8.46	68.67	60.85	83.47	69.31
YFR036W	0.92	1.27	1.40	1.39	1.48	1.76	1.66	21.07	7.61	83.86	62.18	104.93	69.79
YHR075C	0.89	1.27	1.46	1.56	1.72	2.13	1.91	15.50	5.31	85.50	64.96	101.00	70.27
YHR092C	0.90	1.32	1.52	1.54	1.65	1.92	1.85	12.65	4.95	71.09	65.51	83.74	70.45
YOR381W	0.97	1.45	1.61	1.65	1.73	1.97	1.92	21.77	7.27	91.92	63.40	113.69	70.67
YNL077W	0.87	1.28	1.37	1.40	1.46	1.79	1.68	15.70	7.19	60.11	63.63	75.81	70.82
YDR252W	0.85	1.28	1.44	1.45	1.57	1.85	1.83	18.01	6.75	79.94	64.33	97.95	71.08
YBR245C	0.91	1.27	1.43	1.63	1.75	2.01	1.96	17.45	10.68	58.57	60.41	76.02	71.09
YDR244W	0.92	1.25	1.45	1.48	1.60	1.86	1.77	15.58	7.44	90.49	63.74	106.06	71.18
YGR176W	0.90	1.27	1.44	1.53	1.64	1.98	1.82	12.77	4.75	78.25	66.44	91.02	71.18
YHR096C	0.88	1.19	1.40	1.45	1.55	1.89	1.73	15.20	5.93	87.02	65.80	102.22	71.73
YJR032W	0.97	1.08	1.25	1.22	1.30	1.64	1.43	21.25	8.08	86.03	64.08	107.28	72.16
YGR239C	0.91	1.27	1.50	1.53	1.63	1.80	1.80	16.13	6.77	92.07	65.55	108.21	72.32
YPL184C	0.98	1.47	1.53	1.59	1.66	1.71	1.77	20.49	10.77	52.27	61.67	72.76	72.44
YPR026W	0.91	1.25	1.27	1.47	1.59	1.91	1.81	20.76	8.84	80.92	63.69	101.68	72.53
YCL025C	0.95	1.22	1.38	1.57	1.66	1.96	1.90	19.80	9.25	77.64	63.34	97.44	72.59
YIL037C	0.92	1.30	1.51	1.58	1.69	1.85	1.86	15.34	5.50	86.24	67.62	101.59	73.11
YIL087C	0.90	1.10	1.20	1.32	1.39	1.67	1.51	27.12	13.40	88.74	60.38	115.86	73.78
YHR041C	0.90	1.33	1.53	1.63	1.75	1.92	1.92	13.71	5.22	87.65	68.82	101.36	74.03
YKR064W	0.90	1.27	1.44	1.44	1.50	1.82	1.65	18.85	7.15	86.58	67.13	105.43	74.28
YDR357C	0.91	1.37	1.56	1.53	1.61	1.93	1.93	16.65	6.96	83.98	67.57	100.63	74.54
YDR005C	0.85	1.11	1.27	1.17	1.25	1.61	1.47	16.40	7.09	83.12	67.57	99.52	74.67
YGR159C	0.99	1.13	1.29	1.47	1.63	1.96	1.90	19.68	10.67	81.21	64.03	100.89	74.70
YLL026W	0.91	1.30	1.49	1.52	1.61	1.89	1.79	17.64	6.62	83.98	69.03	101.62	75.65
YOR295W	0.96	1.05	1.12	1.49	1.66	1.93	1.91	19.35	9.75	68.19	66.82	87.53	76.58
YBR238C	0.86	1.14	1.34	1.43	1.50	1.82	1.73	20.09	7.69	95.86	68.94	115.94	76.63
YDL081C	0.97	1.01	1.19	1.51	1.70	1.95	1.94	27.98	9.94	92.75	66.71	120.73	76.65
YEL005C	0.94	1.39	1.57	1.68	1.79	2.04	1.99	17.60	7.09	88.66	70.21	106.26	77.30
YCR034W	0.88	1.18	1.35	1.45	1.63	1.87	1.80	23.66	10.20	103.05	68.50	126.71	78.70
YPR013C	0.96	1.39	1.57	1.62	1.71	1.98	1.91	18.15	8.10	79.85	70.84	98.00	78.94
YBR231C	1.11	1.52	1.68	1.77	1.82	2.02	2.00	23.82	9.60	92.17	69.79	115.99	79.39
YDR085C	1.08	1.70	1.86	1.97	2.07	2.20	2.20	22.60	8.82	97.09	71.96	119.69	80.78
YGR123C	0.92	1.20	1.42	1.46	1.56	2.01	1.75	20.83	8.24	92.97	72.59	113.80	80.83
YBR261C	1.04	1.51	1.68	1.75	1.85	2.12	2.06	21.42	8.99	99.04	72.00	120.45	80.98
YEL053C	0.88	1.23	1.42	1.53	1.65	1.94	1.85	17.59	9.03	79.34	72.12	96.93	81.16
YBR241C	0.91	1.16	1.29	1.45	1.52	1.83	1.74	25.28	13.67	79.10	68.38	104.38	82.04
YNL125C	0.83	1.04	1.07	1.00	1.01	1.34	1.23	19.04	13.55	62.28	68.49	81.32	82.04
YGR135W	0.90	1.14	1.32	1.33	1.42	1.92	1.56	22.78	10.39	96.85	72.31	119.63	82.71
YHR151C	0.88	1.20	1.40	1.44	1.56	2.08	1.74	21.14	8.48	101.59	78.19	122.73	86.68
YOR265W	0.89	1.31	1.47	1.56	1.64	1.90	1.86	21.40	15.14	74.31	72.86	95.70	87.99
YOR375C	0.89	1.29	1.33	1.50	1.61	1.70	1.74	17.88	13.91	59.08	74.53	76.96	88.43
YDR247W	0.99	1.41	1.63	1.71	1.82	2.03	1.97	19.27	10.40	93.56	78.54	112.82	88.94
YIL140W	0.91	1.15	1.43	1.61	1.73	2.03	1.94	25.90	10.68	100.95	78.57	126.85	89.26
YJL175W	0.90	1.17	1.38	1.40	1.48	1.80	1.66	23.43	11.61	92.78	78.23	116.21	89.84
YNL082W	0.84	1.31	1.41	1.45	1.52	1.86	1.74	16.47	11.37	67.25	78.48	83.72	89.85
YNL097C	0.87	1.09	1.22	1.31	1.36	1.65	1.57	23.50	18.29	70.19	73.53	93.69	91.82
YDR130C	0.92	0.89	0.94	1.11	1.22	1.47	1.33	40.49	19.47	103.73	72.59	144.22	92.07
YDR363W	0.88	0.92	0.94	0.85	0.82	1.03	0.91	142.10	14.41	165.55	77.96	307.65	92.37
YPL111W	0.95	1.30	1.40	1.57	1.66	1.85	1.80	22.04	12.56	77.12	82.20	99.16	94.76
YHR076W	0.88	0.97	1.12	1.28	1.35	1.61	1.47	38.88	20.06	95.53	74.94	134.41	94.99
YFR040W	0.93	1.34	1.50	1.60	1.73	1.92	1.89	27.62	12.73	99.25	83.14	126.88	95.87
YPL166W	0.92	1.38	1.44	1.47	1.55	1.79	1.67	27.84	16.70	67.52	79.86	95.36	96.56
YDR241W	0.94	1.00	1.23	1.36	1.48	1.78	1.67	26.87	13.12	107.49	83.59	134.37	96.71
YDR174W	0.94	0.93	1.03	1.13	1.48	1.78	1.77	38.71	12.72	127.62	84.28	166.33	97.00
YPL271W	0.93	1.09	1.17	1.22	1.37	1.51	1.44	47.45	22.23	86.46	75.79	133.90	98.02
YPR173C	0.92	1.34	1.42	1.42	1.46	1.74	1.64	29.21	17.97	83.77	81.79	112.98	99.75
YMR263W	0.86	1.06	1.25	1.29	1.34	1.62	1.54	29.03	22.46	77.20	79.89	106.22	102.34
YGR223C	0.94	1.34	1.49	1.54	1.61	1.85	1.78	35.79	25.79	97.92	77.24	133.71	103.03
YPR042C	0.90	1.20	1.17	1.28	1.35	1.47	1.49	32.47	20.01	85.87	84.42	118.34	104.44
YLR304C	0.88	1.29	1.45	1.53	1.62	1.82	1.77	23.73	15.97	100.60	91.15	124.33	107.12
YHR025W	0.87	1.15	1.26	1.31	1.46	2.06	1.63	25.97	12.70	110.48	95.45	136.45	108.15
YHL042W	0.88	1.01	1.17	1.23	1.33	1.58	1.55	34.43	27.05	87.66	81.67	122.09	108.72
YDR389W	1.01	1.47	1.71	1.88	2.00	2.12	2.12	47.44	28.76	38.99	80.83	86.43	109.59
YDR242W	0.94	1.30	1.52	1.56	1.66	1.90	1.80	30.33	15.90	112.89	94.83	143.22	110.74
YOR323C	0.94	1.07	0.90	0.96	1.22	1.41	1.54	33.90	23.24	85.62	95.76	119.52	119.00
YGL166W	0.90	1.13	1.27	1.26	1.38	1.69	1.60	38.99	19.44	120.10	103.75	159.08	123.20
YLL007C	0.89	1.51	1.67	1.67	1.74	2.02	2.00	44.57	30.92	96.91	93.53	141.48	124.45
YPR074C	0.91	0.98	0.90	0.98	1.25	1.50	1.71	48.31	28.33	108.50	96.99	156.81	125.32
YDR158W	0.84	1.02	1.13	1.12	1.09	1.20	1.05	47.59	33.31	110.01	93.53	157.60	126.84
YFR053C	0.93	1.37	1.51	1.61	1.72	1.90	1.86	12.81	3.62	152.90	124.82	165.71	128.44
YJR139C	1.03	1.39	1.51	1.51	1.58	1.90	1.78	35.66	19.93	115.28	108.85	150.94	128.78
YPL174C	0.86	1.22	1.26	1.28	1.35	1.39	1.46	38.44	32.13	60.27	98.78	98.71	130.91
YJR033C	0.96	1.30	1.50	1.50	1.54	1.83	1.66	37.07	23.77	121.95	107.37	159.02	131.15
YGR063C	0.97	1.09	1.37	1.53	1.62	2.12	1.81	50.15	26.46	133.07	107.77	183.22	134.23
YPL154C	0.97	1.48	1.64	1.63	1.71	1.88	1.81	56.17	41.35	127.02	121.41	183.19	162.76
YOR209C	0.93	1.30	1.51	1.59	1.69	2.00	1.99	34.88	46.55	79.71	122.94	114.59	169.49
YLR246W	1.00	1.54	1.71	1.66	1.72	2.05	1.95	40.59	48.06	98.55	121.71	139.14	169.77
YGL007C-A	0.87	1.07	1.17	1.17	1.28	1.55	1.46	75.04	53.80	137.75	115.97	212.79	169.77
YNL180C	0.88	1.33	1.46	1.51	1.57	1.77	1.73	73.93	58.36	114.50	115.56	188.43	173.92
YPL120W	0.89	1.30	1.39	1.42	1.45	1.49	1.52	54.53	45.21	104.53	130.81	159.05	176.03
YBR217W	0.97	1.53	1.68	1.70	1.77	1.97	1.89	69.01	50.60	140.61	128.11	209.62	178.71
YOL110W	0.96	1.47	1.64	1.65	1.74	1.99	1.90	65.45	51.87	151.61	130.74	217.06	182.61
YNL223W	0.93	1.55	1.69	1.74	1.81	1.98	1.92	50.22	57.72	106.23	129.35	156.45	187.07
YDL149W	0.90	1.26	1.42	1.45	1.53	1.68	1.59	95.63	58.29	193.18	129.87	288.82	188.16
YGR204W	1.03	1.25	1.32	1.41	1.60	1.94	1.98	93.91	73.98	158.01	131.84	251.91	205.81
YIR034C	0.90	1.18	1.28	1.28	1.35	1.89	1.56	68.84	62.31	148.67	154.28	217.51	216.59
YHL021C	0.91	1.00	1.02	0.88	0.86	1.03	0.94	130.43	124.65	170.55	123.56	300.97	248.21
YHL018W	0.91	0.96	0.96	0.88	0.85	0.98	0.90	120.72	121.40	150.42	127.24	271.14	248.64
YKL133C	0.99	1.08	1.04	0.97	0.94	1.08	1.00	133.80	127.22	141.57	126.21	275.37	253.43
YGR111W	1.03	1.09	1.11	1.03	1.00	1.12	1.05	136.62	123.59	184.04	134.45	320.66	258.04
YGR031W	0.93	0.97	0.97	0.91	0.89	0.99	0.92	130.85	121.90	152.82	137.90	283.67	259.80
YGR087C	1.04	1.11	1.13	1.02	1.01	1.14	1.06	136.14	121.65	163.21	139.82	299.35	261.47
YGR053C	1.07	1.14	1.16	1.07	1.04	1.18	1.10	130.33	125.83	165.79	135.78	296.11	261.60
YGR027C	0.95	0.99	1.00	0.93	0.90	1.02	0.94	140.97	124.01	157.30	139.97	298.27	263.98
YGR010W	1.05	1.11	1.12	1.03	1.01	1.14	1.06	119.46	121.45	175.32	143.93	294.78	265.38
YGR072W	0.96	1.00	1.02	0.94	0.92	1.02	0.95	135.27	127.47	151.67	139.40	286.94	266.87
YDR408C	0.98	1.13	1.20	1.22	1.37	1.71	1.71	94.71	105.86	149.15	164.11	243.86	269.98
YJR120W	1.04	1.09	1.14	1.07	1.07	1.16	1.08	81.98	87.54	155.43	182.99	237.41	270.53
YGR169C-A	1.03	1.10	1.10	1.01	0.99	1.10	1.03	149.65	134.39	180.82	136.77	330.47	271.16
YGR177C	0.96	1.03	1.03	0.93	0.91	1.04	0.96	135.74	130.15	174.37	141.82	310.11	271.97
YDL232W	0.91	0.88	0.88	0.89	0.94	1.74	2.07	141.78	122.86	169.02	150.17	310.81	273.03
YJR107W	0.87	0.95	0.93	0.83	0.83	0.95	0.87	132.86	147.40	143.79	129.39	276.65	276.80
YHL014C	0.88	0.92	0.93	0.85	0.82	0.94	0.86	132.08	138.87	166.26	138.41	298.34	277.28
YMR300C	0.88	1.01	1.03	1.01	1.10	1.42	1.37	90.83	116.01	114.81	167.98	205.64	283.99
YIL079C	0.89	0.92	0.92	0.85	0.83	0.93	0.86	145.49	145.08	166.92	139.59	312.41	284.66
YLR227W-A	0.89	0.92	0.96	0.86	0.84	0.98	0.88	148.21	130.75	161.34	155.71	309.55	286.46
YEL051W	0.89	0.93	0.94	0.85	0.82	0.98	0.87	124.66	129.58	149.78	158.99	274.44	288.58
YHR147C	0.87	0.89	0.91	0.84	0.81	0.93	0.86	128.04	152.38	145.16	136.81	273.19	289.18
YHL020C	0.89	0.94	0.94	0.86	0.83	0.96	0.88	132.98	150.28	149.00	140.07	281.98	290.36
YGR124W	0.97	1.02	1.04	0.95	0.93	1.05	0.98	135.85	140.75	168.17	154.63	304.02	295.38
YGR193C	0.88	0.93	0.93	0.84	0.82	0.94	0.86	136.47	150.06	160.17	147.83	296.64	297.89
YNL090W	0.92	0.94	0.97	0.89	0.87	0.99	0.90	142.18	135.07	189.15	163.02	331.33	298.09
YHL015W-A	0.84	0.89	0.90	0.81	0.78	0.92	0.84	129.68	145.74	157.62	152.59	287.30	298.33
YFR012W	0.90	0.96	0.96	0.86	0.85	0.96	0.88	142.52	139.19	142.56	159.27	285.08	298.46
YGR294W	0.88	0.92	0.92	0.85	0.83	0.94	0.87	133.89	144.95	161.28	155.60	295.17	300.56
YLR179C	1.00	0.99	1.03	0.98	0.96	1.06	1.00	145.35	133.82	150.38	167.04	295.73	300.86
YKR080W	0.89	0.99	0.98	0.86	0.84	1.04	0.93	143.09	139.22	148.94	162.47	292.03	301.70
YGR240C	0.91	0.96	0.96	0.88	0.85	0.97	0.89	134.68	143.56	166.20	159.02	300.88	302.58
YKR010C	0.86	0.89	0.90	0.83	0.81	0.94	0.87	133.09	139.68	140.28	162.94	273.37	302.62
YGR204C-A	0.89	0.92	0.93	0.86	0.84	0.95	0.88	123.40	152.13	148.22	152.06	271.61	304.19
YGR177C	0.91	0.98	0.98	0.88	0.86	0.99	0.91	151.08	151.14	161.93	156.78	313.01	307.92
YHL008C	0.88	0.91	0.92	0.85	0.83	0.93	0.86	134.42	147.81	163.41	161.65	297.83	309.46
YNL121C	0.91	0.93	0.96	0.87	0.85	0.97	0.88	143.88	144.12	183.90	165.74	327.79	309.85
YMR015C	0.85	0.86	0.89	0.81	0.79	0.90	0.82	159.12	141.35	187.39	168.64	346.51	309.99
YKL135C	0.93	0.92	0.98	0.91	0.89	1.00	0.93	127.82	151.06	150.30	159.16	278.12	310.22
YFR032C	0.81	0.84	0.84	0.77	0.75	0.85	0.77	142.12	142.69	164.89	167.91	307.01	310.60
YKL124W	0.94	0.94	0.98	0.91	0.89	0.97	0.91	131.73	155.89	161.73	155.41	293.46	311.30
YOR092W	0.98	1.01	1.05	0.96	0.94	1.06	0.98	142.59	147.57	171.60	166.60	314.18	314.17
YHL011C	0.93	0.97	0.98	0.90	0.88	1.00	0.92	128.78	149.60	147.52	164.75	276.30	314.35

ORF name	OD at 600 nm at sampling time points (hours)							GLUCOSE		FRUCTOSE		TOTAL SUGARS	
	0 h	20 h	27 h	44 h	66 h	93 h	113 h	120 h	146 h	120 h	146 h	120 h	146 h
YJR135C	0.91	0.91	0.94	0.88	0.88	0.95	0.90	133.14	163.93	149.31	151.03	282.45	314.96
YNL167C	0.95	0.96	1.02	0.92	0.90	1.02	0.93	153.04	144.78	180.49	171.17	333.54	315.95
YJR118C	0.95	0.95	0.99	0.92	0.92	1.00	0.94	134.73	166.81	148.63	150.19	283.36	316.99
YPR036W	0.89	0.99	0.99	0.87	0.90	1.00	0.95	184.45	147.31	137.38	170.44	321.83	317.74
YPR031W	0.89	1.00	1.01	0.85	0.83	0.94	0.91	173.53	156.03	137.56	162.06	311.09	318.10
YJR104C	0.89	0.96	0.94	0.85	0.83	0.93	0.87	131.02	170.04	138.51	148.80	269.52	318.84
YJR035W	0.97	0.99	1.02	0.95	0.94	1.04	0.98	132.37	162.00	143.58	156.95	275.94	318.95
YNL160W	0.92	0.93	0.98	0.89	0.87	0.99	0.91	146.20	139.06	169.38	180.63	315.57	319.69
YGR155W	0.95	1.01	1.02	0.93	0.90	1.04	0.95	141.93	157.48	164.44	162.53	306.37	320.01
YNL180C	0.89	0.91	0.95	0.86	0.84	0.96	0.87	141.43	147.60	197.32	173.58	338.76	321.18
YDR495C	0.91	0.95	0.98	0.88	0.86	0.98	0.90	158.79	150.81	171.62	174.08	330.41	324.89
YNL094W	0.94	0.96	0.99	0.91	0.88	1.00	0.92	134.44	153.18	169.41	171.95	303.86	325.13
YOR108W	0.84	0.87	0.91	0.81	0.78	0.91	0.82	174.19	162.96	190.07	163.63	364.25	326.59
YNL134C	0.93	0.95	0.98	0.89	0.87	0.99	0.90	109.77	157.51	167.99	169.38	277.76	326.89
YOR346W	0.89	0.95	0.93	0.86	0.83	0.94	0.87	176.95	161.81	184.43	166.87	361.38	328.68
YGR087C	0.95	0.94	0.94	0.94	0.92	0.91	0.90	172.50	168.31	138.48	160.63	310.98	328.94
YIL036W	0.92	0.98	0.97	0.89	0.87	0.95	0.91	200.59	170.67	173.72	158.31	374.31	328.98
YGL249W	0.96	1.02	1.01	0.93	0.91	1.00	0.94	137.99	155.81	159.16	173.64	297.14	329.44
YFL036W	0.88	0.93	0.93	0.84	0.82	0.93	0.86	132.51	161.12	158.57	168.67	291.08	329.79
YNL173C	0.95	0.98	1.02	0.93	0.90	1.03	0.94	168.11	145.62	175.93	184.45	344.03	330.07
YNL219C	0.92	0.95	0.98	0.89	0.86	0.99	0.90	155.11	157.18	208.18	173.87	363.30	331.05
YPL071C	0.94	0.92	0.91	0.92	0.89	0.88	0.88	130.86	157.74	140.48	173.98	271.34	331.72
YER180C-A	0.93	0.98	1.00	0.90	0.88	1.00	0.92	137.37	152.53	177.25	179.90	314.62	332.42
YER180C	0.93	0.98	0.98	0.90	0.88	0.99	0.91	142.77	158.81	171.81	174.35	314.58	333.16
YDL083C	0.87	0.96	1.04	0.83	0.81	1.08	0.94	138.30	158.79	151.81	174.84	290.10	333.63
YNL157W	0.96	0.97	0.99	0.93	0.91	1.00	0.94	152.98	155.51	170.39	178.21	323.37	333.72
YNL194C	0.96	0.99	1.03	0.93	0.91	1.03	0.94	144.74	147.24	181.06	186.93	325.80	334.17
YDL085C-A	0.86	0.98	1.07	0.82	0.80	1.09	0.96	134.36	161.94	153.40	172.56	287.77	334.50
YOR382W	0.99	1.02	1.04	0.97	0.94	1.06	0.97	151.48	154.60	198.02	180.06	349.50	334.66
YER115C	0.82	0.87	0.87	0.79	0.77	0.86	0.81	154.22	151.82	166.57	183.75	320.78	335.57
YMR053C	0.89	0.93	0.96	0.85	0.85	0.99	0.89	157.02	150.76	169.65	185.18	326.67	335.94
YOR221C	0.92	0.95	0.96	0.89	0.86	0.87	0.92	124.40	167.99	125.17	168.36	249.57	336.35
YER037W	1.06	1.09	1.12	1.04	1.00	1.13	1.05	155.39	163.57	166.24	173.70	321.62	337.27
YER060W-A	0.93	0.95	0.98	0.91	0.93	1.00	0.93	183.49	180.98	55.20	157.27	238.68	338.25
YGL251C	0.94	1.00	0.98	0.91	0.89	0.97	0.92	147.45	163.49	165.16	174.94	312.62	338.43
YLR239C	1.04	1.11	1.12	1.04	1.01	1.12	1.06	148.69	157.40	150.36	182.97	299.05	340.37
YNL190W	0.99	1.03	1.07	0.97	0.95	1.08	0.98	159.68	161.96	174.99	179.18	334.67	341.14
YNL183C	0.92	0.94	0.98	0.88	0.86	0.98	0.90	155.00	163.95	187.04	178.67	342.05	342.62
YFL026W	0.88	0.93	0.93	0.84	0.82	0.94	0.86	139.18	164.89	159.57	178.04	298.75	342.93
YLR089C	0.85	0.86	0.88	0.82	0.79	0.90	0.82	161.93	159.40	180.86	185.23	342.79	344.63
YDR419W	0.94	0.99	1.00	0.92	0.89	1.00	0.93	148.93	165.63	170.23	179.10	319.16	344.73
YOR363C	0.92	0.94	0.96	0.89	0.87	0.98	0.90	186.64	159.55	199.89	185.77	386.54	345.33
YPL038W	1.00	1.05	1.08	0.97	0.95	1.08	1.00	154.69	163.02	184.94	184.66	339.63	347.68
YNL204C	0.99	1.03	1.06	0.97	0.95	1.07	0.99	141.32	162.27	195.39	186.09	336.71	348.36
YNL145W	0.93	0.95	0.96	0.90	0.88	0.97	0.90	143.56	157.12	194.40	191.97	337.95	349.08
YNL141W	0.94	0.98	1.00	0.92	0.90	1.01	0.93	164.20	162.16	195.82	188.96	360.02	351.13
YER052C	0.96	0.99	1.01	0.94	0.92	1.04	0.96	159.88	167.81	174.47	183.58	334.35	351.39
YOR172W	0.91	0.96	0.98	0.89	0.87	0.99	0.90	178.14	159.10	197.13	192.43	375.27	351.53
YPR024W	0.99	1.06	1.04	0.97	0.95	1.04	0.93	152.93	167.64	176.41	184.38	329.34	352.02
YNL135C	0.98	1.00	1.02	0.94	0.92	1.03	0.95	155.85	153.21	192.82	199.47	348.66	352.68
YNL127W	0.97	1.00	1.03	0.94	0.92	1.03	0.95	150.62	157.45	189.44	195.28	340.07	352.73
YGL100W	0.85	0.91	0.90	0.81	0.79	0.90	0.82	131.90	160.84	155.80	192.62	287.71	353.47
YNL199C	0.96	0.99	1.02	0.93	0.91	1.03	0.95	164.25	169.46	193.91	184.28	358.16	353.73
YDR425W	0.85	0.89	0.89	0.82	0.80	0.89	0.83	150.20	164.31	171.75	189.42	321.95	353.73
YPL021W	0.97	1.02	1.03	0.94	0.92	1.07	0.97	161.90	157.54	177.20	196.71	339.10	354.25
YOR377W	0.96	0.98	1.00	0.94	0.92	1.02	0.95	167.25	158.71	188.95	195.82	356.20	354.53
YLR375W	0.89	0.93	0.97	0.85	0.84	0.97	0.87	143.10	167.11	175.30	187.50	318.40	354.61
YDL001W	0.91	0.89	0.93	0.86	0.84	0.96	0.89	223.60	171.18	220.57	184.03	444.17	355.21
YNL096C	0.88	0.90	0.94	0.84	0.82	0.96	0.86	173.14	154.76	203.05	200.63	376.19	355.39
YIL036W	0.88	0.89	0.95	0.85	0.83	1.98	0.86	175.93	152.72	191.31	202.78	367.24	355.50
YNL116W	0.94	0.97	1.01	0.91	0.89	1.02	0.93	162.64	157.84	217.80	197.95	380.44	355.80
YNL234W	0.93	0.96	0.98	0.90	0.88	0.98	0.91	140.82	163.96	195.72	193.87	336.55	357.83
YDR411C	0.91	0.94	0.96	0.87	0.85	0.96	0.88	146.27	167.99	181.31	189.99	327.58	357.98
YLR260W	0.98	1.02	1.05	0.96	0.93	1.06	0.97	161.27	167.30	188.23	190.83	349.51	358.13
YDR304C	0.84	0.89	0.92	0.81	0.78	0.95	0.85	144.48	170.14	162.51	188.37	306.99	358.51
YDR298C	0.89	0.94	0.96	0.85	0.82	0.97	0.88	137.73	178.45	160.42	180.95	298.15	359.40
YEL041W	0.90	0.94	0.96	0.87	0.85	0.98	0.89	154.98	168.61	171.35	192.10	326.33	360.70
YDR458C	0.94	1.00	1.04	0.92	0.89	1.06	0.96	154.48	179.87	167.17	181.31	321.66	361.17
YBR204C	1.13	1.13	1.18	1.12	1.10	1.25	1.17	247.01	168.42	223.98	194.39	470.99	362.81
YIL049W	0.89	0.90	0.96	0.86	0.83	2.07	0.87	168.36	158.94	206.43	206.95	374.79	365.89
YPR031W	0.95	1.04	0.91	0.92	0.90	1.00	0.88	155.49	185.01	146.15	181.25	301.63	366.26
YOR298W	0.90	0.92	0.86	0.86	0.83	0.90	0.84	122.01	180.04	150.73	188.27	272.74	368.32
YDR448W	1.02	1.07	1.10	1.01	0.98	1.12	1.03	153.85	182.84	167.62	189.63	321.47	372.47
YGR250C	0.94	0.96	0.91	0.91	0.88	0.98	0.92	182.04	183.32	172.06	190.35	354.10	373.67
YBR132C	0.96	0.94	0.97	0.91	0.89	1.00	0.93	193.36	171.95	235.10	204.06	428.46	376.00
YNL072W	0.90	0.91	0.96	0.88	0.86	0.96	0.91	132.46	171.99	139.66	204.06	272.11	376.05
YDR256C	0.90	0.90	0.89	0.88	0.85	0.85	0.84	144.86	189.26	153.93	189.99	298.79	379.25
YPR049C	0.95	1.00	0.90	0.90	0.88	0.86	0.90	168.28	183.19	142.76	196.15	311.04	379.34
YER180C-A	0.94	1.00	0.99	0.92	0.89	1.01	0.94	189.50	194.53	142.38	185.84	331.88	380.37
YLR293C	0.84	0.86	0.89	0.79	0.77	0.90	0.80	164.52	185.21	177.49	201.43	342.00	386.64
YGR174C	0.91	0.90	0.92	0.93	0.94	1.08	0.98	224.66	191.08	196.50	197.88	421.17	388.96
YMR257C	0.92	0.95	0.99	0.89	0.87	1.00	0.91	154.07	184.63	184.16	209.29	338.23	393.92
YMR119W	0.85	0.85	0.87	0.81	0.79	0.90	0.83	146.41	195.34	184.98	200.88	331.39	396.22
YMR032W	0.88	0.92	0.95	0.84	0.83	0.96	0.87	154.03	192.78	190.38	203.77	344.41	396.55
YCR075W-A	0.88	0.89	0.94	0.84	0.82	0.98	0.88	228.18	199.63	205.04	200.47	433.22	400.10
YHR082C	0.90	0.91	0.97	0.86	0.85	1.95	0.88	195.18	187.80	212.30	213.90	407.47	401.70
YPR119W	0.97	0.97	0.95	0.95	0.94	1.02	0.96	154.48	198.53	164.26	204.47	318.74	402.99
YOR304W	0.96	1.00	0.93	0.93	0.91	0.90	0.89	125.62	196.73	132.58	208.28	258.20	405.00
YLR406C	0.84	0.87	0.91	0.79	0.78	0.92	0.82	161.71	183.80	196.11	222.96	357.82	406.76
YKL138C	0.90	0.95	0.95	0.87	0.84	0.96	0.89	129.47	150.53	146.46	262.54	275.93	413.07
YKL216W	1.01	1.05	1.11	1.04	1.05	1.19	1.09	160.31	184.06	179.11	229.01	339.41	413.07
YMR100W	0.84	0.86	0.89	0.79	0.77	0.90	0.81	162.91	208.45	182.81	206.89	345.72	415.34
YLR058C	0.89	0.96	0.94	0.86	0.84	0.97	0.90	139.34	211.45	163.66	208.39	303.01	419.85
YMR104C	0.85	0.86	0.88	0.81	0.79	0.89	0.82	152.75	195.09	197.38	227.81	350.13	422.89
YPR066W	0.85	0.93	0.82	0.82	0.79	0.78	0.78	157.53	210.74	157.45	215.07	314.98	425.81
YMR054W	0.89	0.93	0.97	0.87	0.85	0.98	0.89	166.56	207.68	193.28	223.62	359.85	431.29
YPL271W	0.92	1.03	0.90	0.91	0.88	0.87	0.88	171.27	212.16	169.29	219.87	340.55	432.03
YPR036W	0.89	0.99	0.87	0.87	0.85	0.84	0.84	161.35	213.81	169.95	225.06	331.30	438.87

Appendix 4. Shortlisted 842 deletants from the LYDL_HN based on sugars at both time points (102 and 118 h).

ORF.name	Strain	Optical density at 600 nm at regular intervals (hours)						GLUCOSE		FRUCTOSE		TOTAL SUGARS (g/l)		TOTAL AMINO ACIDS (mg/L)
		0	26	33	48	59	78	102 h	118 h	102 h	118 h	102 h	118 h	102 h
YML009c	MRPL39	0.91	0.91	1.34	1.75	1.92	2.11	6.33	47.62	4.12	-58.41	10.45	-1.79	280.86
YMR007W	YMR007w	0.89	0.89	1.31	1.73	1.92	2.13	6.04	-0.33	6.40	-1.57	12.44	-1.90	279.07
YLR095C	IOC2	1.00	1.33	1.51	2.28	2.09	2.18	0.95	0.93	-1.64	-2.63	-0.69	-1.70	202.39
YLR062C	BUD28	1.00	1.09	1.14	1.49	1.70	1.79	1.03	1.10	-0.11	-2.44	0.93	-1.33	177.56
YLR049C	YLR049c	1.00	1.38	1.63	2.01	2.18	2.37	0.88	1.12	-1.60	-2.26	-0.72	-1.14	139.65
YHL029C	OCA5	1.05	1.55	1.78	2.16	2.33	2.35	0.03	-0.07	-0.11	-1.00	-0.08	-1.07	237.92
YHL041W	YHL041w	1.03	1.44	1.62	2.04	2.21	2.36	0.00	0.01	0.11	-1.04	0.11	-1.02	263.44
YOR035C	SHE4	0.93	1.14	1.28	1.55	1.71	1.93	-0.05	-0.06	0.64	-0.93	0.59	-0.99	219.31
YPL230W	USV1	0.94	1.20	1.36	1.82	2.00	2.21	-0.18	-0.12	0.03	-0.85	-0.15	-0.97	264.78
YHL046C	PAU13	1.03	1.60	1.74	2.11	2.28	2.34	0.04	0.02	0.43	-0.99	0.47	-0.97	262.46
YHL006C	SHU1	0.95	1.21	1.32	1.75	1.92	2.08	0.04	-0.05	1.81	-0.88	1.85	-0.94	287.25
YGR177C	ATP2	0.96	1.31	1.52	2.06	2.26	2.37	0.11	-0.05	0.97	-0.87	1.08	-0.92	263.81
YPL141C	FRK1	1.01	1.41	1.57	1.98	2.09	2.27	0.05	0.07	0.14	-0.97	0.18	-0.91	292.14
YMR145C	NDE1	1.08	1.37	1.62	2.00	2.17	2.33	0.13	0.21	-0.58	-1.11	-0.45	-0.90	275.70
YHL032C	GUT1	1.05	1.50	1.72	2.13	2.29	2.43	0.24	0.04	0.27	-0.93	0.51	-0.89	271.07
YGR157W	CHO2	0.97	1.36	1.63	2.09	2.23	2.35	0.16	0.14	6.81	-0.99	6.97	-0.85	233.10
YHR015W	MIP6	0.97	1.26	1.41	1.86	2.07	2.22	-0.09	-0.04	1.72	-0.78	1.63	-0.82	260.53
YMR189W	GCV2	0.95	1.20	1.39	1.82	2.05	2.26	0.08	0.03	1.72	-0.84	1.80	-0.81	278.96
YOR029W	YOR029w	0.93	1.23	1.42	1.86	2.08	2.29	0.19	0.00	0.33	-0.81	0.52	-0.81	276.11
YHL044W	YHL044w	0.94	1.27	1.45	1.90	2.10	2.26	0.08	0.09	1.22	-0.88	1.29	-0.80	276.18
YPL263C	KEL3	1.00	1.37	1.61	2.07	2.21	2.37	0.04	0.08	7.47	-0.87	7.51	-0.79	287.03
YPL119C	DBP1	0.97	1.35	1.59	2.02	2.02	2.14	0.15	-0.12	5.54	-0.65	5.69	-0.78	283.77
YPL221W	FLC1	1.04	1.52	1.73	2.17	2.28	2.42	-0.16	0.05	2.51	-0.82	2.34	-0.77	276.58
YHL040C	ARN1	0.89	1.19	1.30	1.72	1.90	2.05	0.02	0.13	1.05	-0.90	1.07	-0.76	275.56
YPL244C	HUT1	0.97	1.28	1.51	2.00	2.16	2.32	0.07	0.05	1.52	-0.81	1.59	-0.75	268.41
YPL202C	AFT2	0.90	1.21	1.56	1.62	1.80	1.95	0.06	0.05	1.14	-0.79	1.20	-0.74	272.54
YPL116W	HOS3	0.91	1.18	1.33	1.80	1.96	2.16	0.04	-0.01	1.79	-0.72	1.83	-0.73	278.05
YDR125C	ECM18	0.94	1.18	1.34	1.84	2.07	2.22	0.57	0.07	0.84	-0.79	1.41	-0.72	267.42
YMR024W	MRPL3	1.01	1.01	1.05	1.04	1.06	1.12	1.22	0.66	-1.52	-1.38	-0.30	-0.72	475.77
YOR031W	CRS5	1.00	1.34	1.52	1.98	2.20	2.37	0.58	-0.04	0.84	-0.69	1.41	-0.72	267.81
YHR029C	YHI9	0.94	1.25	1.43	1.94	2.11	2.24	-0.03	-0.25	10.11	-0.46	10.08	-0.71	270.28
YHL033C	RPL8a	1.03	1.30	1.49	1.98	2.18	2.28	0.12	0.06	0.73	-0.75	0.84	-0.69	257.06
YAR042W	SWH1	0.87	1.11	1.28	1.62	1.80	2.05	1.45	1.18	4.16	-1.85	5.62	-0.67	186.14
YHL017W	YHL017w	1.00	1.35	1.56	1.98	2.14	2.30	0.04	-0.01	3.83	-0.65	3.87	-0.67	283.55
YPL232W	SSO1	0.82	1.18	1.43	1.88	2.02	2.20	0.00	-0.15	5.46	-0.50	5.46	-0.65	260.85
YOL081W	IRA2	0.98	1.29	1.46	1.87	2.03	2.31	-0.02	0.02	8.33	-0.67	8.31	-0.65	341.87
YOR045W	TOM6	0.98	1.37	1.56	1.94	2.14	2.30	-0.01	-0.04	1.72	-0.56	1.71	-0.61	281.73
YLR061W	RPL22a	1.00	1.09	1.18	1.55	1.76	2.04	1.06	0.93	-0.03	-1.52	1.03	-0.60	261.40
YHL045W	YHL045w	0.95	1.28	1.47	1.96	2.13	2.31	0.10	0.05	3.21	-0.64	3.31	-0.59	264.14
YHL026C	YHL026c	0.93	1.23	1.42	1.89	2.08	2.23	0.08	-0.01	3.95	-0.58	4.03	-0.58	273.74
YAR043C	Unknown	0.92	1.12	1.28	1.63	1.81	2.06	1.25	1.28	-0.38	-1.85	0.87	-0.58	126.76
YPL140C	MKK2	0.95	1.33	1.51	2.02	2.17	2.36	0.30	0.05	9.28	-0.62	9.57	-0.57	277.63
YGR200C	ELP2	0.94	1.15	1.25	1.71	1.93	2.11	0.14	-0.16	9.63	-0.41	9.77	-0.57	255.03
YHL022C	SPO11	0.97	1.37	1.57	2.02	2.15	2.29	0.12	0.14	5.44	-0.70	5.57	-0.56	293.06
YGR203W	YCH1	1.06	1.55	1.83	2.24	2.36	2.45	0.17	0.08	5.52	-0.64	5.69	-0.56	262.99
YPL258C	THI21	0.97	1.23	1.44	1.97	2.14	2.33	0.03	0.01	4.21	-0.53	4.24	-0.52	267.47
YPL114W	YPL114w	0.88	1.11	1.27	1.74	1.93	2.14	0.14	0.07	2.74	-0.56	2.88	-0.50	278.42
YOL057W	YOL057w	0.97	1.31	1.51	1.98	2.14	2.33	0.26	0.14	9.19	-0.62	9.44	-0.48	281.88
YOR069W	VPS5	0.94	1.28	1.44	1.71	1.86	2.01	-0.02	-0.01	4.01	-0.47	3.99	-0.48	320.46
YOR071C	NRT1	0.96	1.27	1.44	1.88	2.07	2.27	-0.16	0.07	1.82	-0.53	1.67	-0.46	269.46
YAR014C	BUD14	0.98	1.19	1.37	1.77	1.97	2.24	1.81	1.09	5.35	-1.50	7.16	-0.41	342.79
YHL036W	MUP3	0.96	1.28	1.44	1.91	2.09	2.21	0.00	0.00	10.07	-0.38	10.07	-0.38	287.90
YOR360C	PDE2	1.02	1.36	1.50	1.85	2.03	2.21	0.23	-0.04	0.79	-0.34	1.02	-0.38	268.83
YLR082C	SRL2	0.95	1.23	1.43	1.83	2.03	2.27	0.96	1.24	-0.51	-1.58	0.45	-0.34	193.10
YMR019W	STB4	0.91	0.91	1.33	1.78	1.94	2.14	0.86	1.06	7.70	-1.40	8.55	-0.34	301.49
YHL013C	OTU2	1.03	1.44	1.63	2.06	2.25	2.36	-0.01	-0.06	2.98	-0.24	2.97	-0.31	284.71
YOR017W	PET127	0.92	1.18	1.35	1.73	1.92	2.16	0.22	-0.13	3.12	-0.17	3.34	-0.30	279.11
YHL021C	AIM17	0.94	1.23	1.39	1.90	2.10	2.21	0.12	-0.02	10.24	-0.26	10.36	-0.28	276.51
YHL009C	YAP3	0.96	1.36	1.58	2.05	2.19	2.31	-0.01	-0.12	4.58	-0.14	4.57	-0.25	262.24
YML007W	YAP1	0.95	0.95	1.44	1.89	2.04	2.21	1.28	1.16	-1.58	-1.38	-0.31	-0.22	290.86
YML086C	ALO1	0.97	0.97	1.37	1.85	2.03	2.23	1.34	1.17	-1.48	-1.38	-0.14	-0.22	278.00
YML030W	AIM31	0.95	0.95	1.42	1.79	1.96	2.14	9.97	1.22	1.64	-1.43	11.61	-0.21	269.49
YHL014C	YLF2	1.00	1.38	1.60	2.05	2.23	2.34	0.02	0.02	5.66	-0.21	5.68	-0.19	267.87
YOL153C	YOL153c	1.00	1.40	1.65	2.14	2.30	2.39	-0.02	0.02	1.57	-0.20	1.55	-0.17	262.67
YOR062C	YOR062c	0.99	1.33	1.51	1.91	2.12	2.28	0.15	-0.01	4.99	-0.15	5.14	-0.17	273.27
YPL187W	MF(ALPHA)1	0.94	1.17	1.29	1.72	1.89	2.11	0.08	0.04	6.31	-0.20	6.39	-0.16	294.03
YAL053W	FLC2	0.93	1.22	1.37	1.78	1.81	1.95	1.54	1.20	5.62	-1.35	7.16	-0.15	244.72
YMR003W	AIM34	0.98	0.98	1.43	1.84	2.02	2.24	5.72	1.29	4.71	-1.43	10.43	-0.14	266.67
YNL086W	YNL086w	1.00	1.20	1.37	1.77	1.99	2.21	0.13	-0.02	15.86	-0.11	15.99	-0.13	292.66
YML050W	AIM32	0.93	0.93	1.43	1.85	2.02	2.24	9.12	1.38	1.82	-1.51	10.94	-0.13	262.87
YMR166C	YMR166c	0.98	1.15	1.31	1.72	1.96	2.21	0.09	0.12	2.30	-0.23	2.39	-0.11	286.73
YNL254C	RTC4	0.96	1.31	1.56	1.97	2.16	2.29	0.15	0.01	4.14	-0.11	4.28	-0.10	264.35
YGR153W	YGR153w	1.03	1.44	1.74	2.18	2.30	2.41	0.05	0.07	5.96	-0.15	6.02	-0.09	261.85
YGR173W	RBG2	1.05	1.52	1.75	2.21	2.34	2.45	0.05	0.05	5.20	-0.14	5.26	-0.08	265.06
YHL008C	YHL008c	1.00	1.36	1.56	2.03	2.21	2.32	-0.05	-0.13	4.32	0.04	4.27	-0.08	284.30
YML018C	YML018c	0.98	0.98	1.51	1.88	2.03	2.21	11.75	1.31	2.36	-1.38	14.11	-0.08	254.15
YMR002W	MIC17	0.98	0.98	1.45	1.83	1.98	2.17	9.59	1.42	4.32	-1.49	13.90	-0.08	284.22
YHR022C	YHR022c	0.92	1.16	1.32	1.86	2.06	2.19	-0.03	-0.07	6.86	0.00	6.83	-0.07	276.83
YPL103C	FMP30	0.94	1.27	1.45	1.93	2.08	2.28	-0.04	0.23	1.54	-0.29	1.49	-0.06	303.93
YML080W	DUS1	1.01	1.01	1.47	1.88	2.04	2.22	12.55	1.23	1.78	-1.28	14.32	-0.04	304.93
YML088W	UFO1	0.90	0.90	1.33	1.77	1.95	2.19	1.51	1.34	-0.99	-1.38	0.52	-0.04	295.02
YPL167C	REV3	0.91	1.14	1.27	1.78	1.98	2.20	0.27	0.13	2.05	-0.17	2.32	-0.03	271.03
YMR016C	SOK2	1.02	1.02	1.71	1.67	1.85	2.01	3.88	1.40	6.27	-1.43	10.14	-0.03	283.92
YPL179W	PPQ1	1.04	1.50	1.70	2.17	2.29	2.42	-0.28	-0.30	3.86	0.27	3.58	-0.03	278.37
YBR245C	ISW1	0.92	1.10	1.26	1.76	2.01	2.21	0.02	0.01	4.14	-0.03	4.12	-0.03	279.32
YAL036C	RBG1	0.88	1.13	1.30	1.67	1.84	2.08	1.75	1.19	9.74	-1.21	11.48	-0.02	230.07
YML013C-A	Unknown	0.97	0.97	1.31	1.76	1.99	2.26	8.45	1.46	1.06	-1.48	9.52	-0.01	282.47
YML037C	YML037c	1.03	1.03	1.60	2.03	2.20	2.38	1.26	1.43	-1.43	-1.45	-0.17	-0.01	255.30
YAL065C	YAL065c	0.90	1.14	1.32	1.66	1.83	2.09	1.09	1.19	6.11	-1.19	7.19	0.00	58.78
YML083C	YML083c	0.99	0.99	1.40	1.80	1.99	2.21	6.77	1.40	4.52	-1.40	11.29	0.00	283.65
YML014W	TRM9	0.99	0.99	1.32	1.77	1.99	2.23	10.78	1.39	1.11	-1.38	11.89	0.01	231.25
YHL010C	ETP1	0.98	1.35	1.58	2.06	2.23	2.34	0.02	-0.04	6.57	0.04	6.59	0.01	275.01
YML052W	SUR7	0.93	0.93	1.20	1.48	1.63	1.85	9.74	1.44	2.02	-1.43	11.76	0.01	276.43
YLR123C	YLR123c	1.03	1.03	1.58	2.01	2.17	2.35	1.39	1.33	0.97	-1.31	2.36	0.02	268.31
YLR120C	YPS1	1.09	1.09	1.75	2.10	2.23	2.36	1.51	1.50	-1.45	-1.48	0.07	0.02	304.26
YML058W	SML1	1.00	1.00	1.40	1.81	2.00	2.22	1.61	1.43	-1.35	-1.42	0.26	0.02	296.52
YGR187C	HGH1	1.03	1.43	1.66	2.10	2.26	2.37	0.21	-0.01	5.55	0.03	5.76	0.02	218.98
YML016C	PPZ1	0.99	0.99	1.44	1.82	2.03	2.25	10.62	1.49	-0.38	-1.46	10.24	0.03	268.39
YML054C	CYB2	1.00	1.00	1.41	1.82	2.00	2.20	10.97	1.43	2.23	-1.40	13.21	0.03	262.66
YML006C	GIS4	1.01	1.01	1.57	1.99	2.15	2.32	1.45	1.46	-1.49	-1.43	-0.04	0.03	281.65
YMR010W	YMR010w	1.07	1.07	1.65	1.97	2.10	2.26	1.39	1.39	-1.55	-1.35	-0.16	0.04	291.84
YMR018W	YMR018w	0.95	0.95	1.37	1.76	1.92	2.12	3.67	1.46	6.43	-1.42	10.10	0.04	294.72
YMR011W	HXT2	0.98	0.98	1.52	1.88	2.03	2.22	5.20	1.48	5.31	-1.43	10.50	0.05	281.26
YML048W	GSF2	0.89	0.89	1.16	1.49	1.66	1.90	6.24	1.70	4.08	-1.64	10.32	0.05	286.83
YPL152W	RRD2	0.94	1.22	1.37	1.85	2.03	2.23	0.05	0.09	1.73	-0.03	1.79	0.05	282.53
YMR023C	MSS1	1.01	1.01	1.54	1.92	2.06	2.25	1.26	1.49	-1.48	-1.43	-0.21	0.06	310.95
YMR017W	SPO20	0.98	0.98	1.47	1.87	2.04	2.25	5.07	1.51	6.13	-1.45	11.20	0.07	278.82
YLR122C	YLR122c	0.99	0.99	1.50	1.86	2.01	2.19	1.65	1.59	0.53	-1.52	2.18	0.07	306.82
YGR176W	YGR176w	0.91	1.23	1.44	1.98	2.16	2.27	0.13	0.09	9.90	-0.02	10.03	0.08	281.25
YPL107W	YPL107w	0.96	1.30	1.54	2.04	2.18	2.33	-0.05	-0.09	1.67	0.17	1.62	0.08	249.45
YML033W	YML033W	0.99	0.99	1.39	1.74	1.91	2.09	10.86	1.62	-0.21	-1.54	10.64	0.09	274.19
YML034W	SRC1	1.01	1.01	1.51	1.90	2.06	2.22	17.07	1.58	-2.95	-1.49	14.12	0.09	290.62
YPL135W	ISU1	1.07	1.40	1.58	2.08	2.23	2.40	0.12	0.19	4.41	-0.09	4.53	0.10	274.83
YML032C	RAD52	1.01	1.01	1.28	1.81	1.83	2.04	11.56	1.54	3.22	-1.45	14.78	0.10	351.47
YML060W	OGG1	0.93	0.93	1.24	1.65	1.84	2.07	6.88	1.44	2.97	-1.34	9.85	0.10	309.46
YML013W	UBX2	1.00	1.00	1.47	1.85	2.00	2.19	11.40	1.66	0.85	-1.55	12.25	0.11	283.20
YML028W	TSA1	0.94	0.94	1.28	1.61	1.78	2.02	18.87	1.50	-0.82	-1.38	18.04	0.11	302.52
YML062C	MFT1	0.93	0.93	1.30	1.69	1.84	2.04	11.61	1.46	0.94	-1.35	12.55	0.11	346.29
YML084W	YML084w	1.03	1.03	1.56	1.96	2.12	2.30	1.74	1.37	-1.52	-1.26	0.22	0.11	308.98
YLR119W	SRN2	0.98	0.98	1.44	1.78	1.94	2.15	1.58	1.53	-1.45	-1.42	0.13	0.12	314.46
YLR121C	YPS3	1.01	1.01	1.62	1.99	2.16	2.26	1.20	1.46	-0.15	-1.34	1.05	0.12	269.43
YHR001W-A	QCR10	0.99	1.33	1.55	2.02	2.19	2.32	-0.07	-0.15	5.81	0.27	5.74	0.12	268.42

ORF.name	Strain	Optical density at 600 nm at regular intervals (hours)						GLUCOSE		FRUCTOSE		TOTAL SUGARS (g/l)		TOTAL AMINO ACIDS (mg/L)
		0	26	33	48	59	78	102 h	118 h	102 h	118 h	102 h	118 h	102 h
YML061C	*PIF1*	0.91	0.91	1.25	1.66	1.87	2.10	9.32	1.57	0.85	-1.45	10.17	0.12	279.01
YML019W	*OST6*	0.97	0.97	1.42	1.82	1.98	2.18	1.57	1.60	-1.46	-1.48	0.11	0.13	265.97
YML004C	*GLO1*	0.94	0.94	1.46	1.87	2.02	2.20	12.73	1.56	1.70	-1.43	14.44	0.13	278.67
YMR027W	*YMR027w*	0.98	0.98	1.45	1.86	2.01	2.22	1.33	1.47	-1.58	-1.34	-0.26	0.13	310.63
YML011C	*RAD33*	0.96	0.96	1.33	1.77	1.98	2.19	10.81	1.46	3.80	-1.32	14.61	0.13	277.40
YML002W	*YML002w*	0.98	0.98	1.49	1.88	2.03	2.21	11.23	1.68	1.61	-1.54	12.84	0.14	289.32
YML078W	*CPR3*	0.97	0.97	1.43	1.79	1.96	2.16	9.62	1.65	2.19	-1.51	11.80	0.14	332.71
YMR021C	*MAC1*	0.87	0.87	0.90	0.95	1.05	1.26	1.37	1.23	-0.14	-1.07	1.24	0.16	311.05
YML008C	*ERG6*	0.88	0.88	1.21	1.58	1.75	1.98	4.43	1.55	7.48	-1.38	11.91	0.16	291.31
YML026C	*RPS18b*	0.89	0.89	1.15	1.61	1.85	2.11	9.13	1.56	2.37	-1.38	11.50	0.17	266.90
YML005W	*TRM12*	0.98	0.98	1.52	1.92	2.11	2.32	9.65	1.70	2.39	-1.52	12.04	0.17	268.67
YMR014W	*BUD22*	0.99	0.99	1.56	1.96	2.10	2.27	7.44	1.70	3.79	-1.52	11.23	0.17	292.53
YML082W	*YML082w*	0.98	0.98	1.39	1.71	1.88	2.11	10.10	1.53	2.11	-1.35	12.21	0.18	272.40
YMR034C	*YMR034c*	0.96	0.96	1.38	1.86	2.07	2.30	1.02	0.96	-1.54	-0.78	-0.52	0.18	295.80
YML012W	*ERV25*	0.90	0.90	1.20	1.65	1.85	2.07	6.27	1.27	4.68	-1.07	10.96	0.20	284.02
YGR209C	*TRX2*	0.93	1.16	1.29	1.81	2.01	2.15	0.09	0.09	5.66	0.12	5.74	0.21	258.46
YDR351W	*SBE2*	0.98	1.28	1.44	1.84	1.98	2.18	0.01	-0.01	5.76	0.21	5.78	0.21	313.89
YML089C	*YML089c*	0.93	0.93	1.38	1.78	1.95	2.16	1.71	1.55	0.70	-1.34	2.41	0.21	327.47
YML035C	*AMD1*	1.00	1.00	1.55	2.01	2.17	2.34	10.67	1.72	3.53	-1.51	14.20	0.21	278.10
YHL019C	*APM2*	0.99	1.25	1.41	1.88	2.08	2.22	0.02	-0.01	9.02	0.23	9.04	0.22	284.35
YML024W	*RPS17a*	0.92	0.92	1.02	1.36	1.67	2.01	5.40	1.62	5.16	-1.37	10.56	0.25	305.50
YML035C-A	*Unknown*	1.00	1.00	1.45	1.88	2.05	2.22	15.75	1.50	-0.40	-1.25	15.35	0.25	304.75
YMR015C	*ERG5*	0.99	0.99	1.51	1.89	2.05	2.24	5.50	1.60	4.49	-1.34	9.99	0.27	294.42
YNL220W	*ADE12*	1.03	1.03	1.17	1.24	1.29	1.38	1.26	1.45	-1.51	-1.19	-0.25	0.27	512.96
YEL003W	*GIM4*	0.91	1.15	1.24	1.56	1.68	1.80	0.07	0.07	7.53	0.20	7.59	0.27	270.23
YML029W	*USA1*	0.94	0.94	1.37	1.79	1.96	2.15	8.47	1.66	2.66	-1.38	11.13	0.27	299.73
YPL164C	*MLH3*	0.98	1.38	1.57	2.08	2.22	2.37	0.12	-0.01	7.79	0.29	7.90	0.28	285.04
YML059C	*NTE1*	0.96	0.96	1.41	1.88	2.06	2.24	1.66	1.91	-1.51	-1.63	0.15	0.28	283.35
YML087C	*AIM33*	0.90	0.90	1.27	1.95	1.95	2.18	1.59	1.54	-1.45	-1.26	0.14	0.28	299.47
YNL220W	*ADE12*	1.12	1.12	1.29	1.38	1.44	1.52	1.51	1.56	-1.31	-1.28	0.20	0.28	411.15
YMR012W	*CLU1*	1.00	1.00	1.53	1.90	2.06	2.23	8.87	1.94	2.13	-1.66	11.00	0.29	294.50
YMR030W	*RSF1*	0.94	0.94	1.45	1.89	2.05	2.25	1.31	1.73	-1.52	-1.42	-0.21	0.31	273.77
YMR029C	*FAR8*	0.93	0.93	1.43	1.87	2.04	2.24	1.23	1.71	-1.55	-1.40	-0.32	0.31	275.48
YML017W	*PSP2*	0.98	0.98	1.59	1.98	2.12	2.29	13.89	1.84	0.77	-1.52	14.67	0.32	236.38
YLR124W	*YLR124w*	0.95	0.95	1.51	1.85	2.00	2.18	1.51	1.81	0.87	-1.49	2.38	0.32	331.18
YMR025W	*CSI1*	0.99	0.99	1.46	1.87	2.05	2.28	1.23	1.59	-1.49	-1.26	-0.26	0.33	270.50
YBR242W	*YBR242w*	0.88	1.10	1.24	1.77	1.99	2.14	0.29	0.07	5.78	0.26	6.06	0.33	292.48
YML079W	*YML079w*	0.97	0.97	1.26	1.58	1.74	1.95	10.83	1.90	1.85	-1.55	12.69	0.35	310.13
YML001W	*YPT7*	1.00	1.00	1.40	1.75	1.90	2.08	9.04	1.71	3.70	-1.35	12.73	0.35	366.38
YML003W	*YML003w*	0.94	0.94	1.42	1.82	1.99	2.17	13.89	1.75	0.27	-1.38	14.17	0.37	282.82
YAL051W	*OAF1*	0.91	1.17	1.33	1.72	1.89	2.12	1.44	1.45	8.55	-1.06	9.99	0.39	224.42
YML051W	*GAL80*	0.93	0.93	1.27	1.61	1.78	1.99	11.53	1.81	2.83	-1.42	14.36	0.40	332.20
YLR125W	*YLR125w*	0.94	0.94	1.37	1.77	1.96	2.18	1.39	1.21	1.17	-0.81	2.56	0.40	274.76
YNL319W	*YNL319w*	1.03	1.44	1.68	2.05	2.21	2.38	0.30	0.09	8.35	0.32	8.65	0.40	252.44
YMR006C	*PLB2*	0.94	0.94	1.37	1.72	1.87	2.08	5.45	1.82	6.19	-1.40	11.64	0.42	287.21
YGR205W	*YGR205w*	1.03	1.45	1.71	2.14	2.28	2.39	0.26	0.18	11.88	0.26	12.13	0.44	279.39
YMR008C	*PLB1*	0.91	0.91	1.27	1.66	1.82	2.04	0.95	1.08	7.12	-0.64	8.07	0.44	290.27
YOL036W	*YOL036w*	1.02	1.31	1.51	1.97	2.15	2.31	1.65	-0.04	28.02	0.50	29.67	0.46	297.51
YAR030C	*YAR030c*	0.93	1.24	1.45	1.82	1.98	2.21	1.59	1.29	5.66	-0.82	7.25	0.47	252.69
YDR061W	*YDR061w*	0.90	1.07	1.23	1.77	2.01	2.19	0.02	-0.05	6.07	0.52	6.09	0.47	277.57
YMR022W	*UBC7*	0.95	0.95	1.40	1.89	2.07	2.29	1.34	1.88	-1.58	-1.40	-0.24	0.48	275.75
YPL206C	*PGC1*	1.07	1.52	1.74	2.15	2.28	2.41	-0.02	0.07	5.37	0.43	5.35	0.50	320.91
YLR059C	*REX2*	0.99	1.29	1.49	1.88	2.04	2.27	0.89	1.02	0.51	-0.49	1.41	0.53	158.28
YPL260W	*YPL260w*	1.01	1.34	1.57	2.05	2.21	2.35	1.41	0.09	28.65	0.44	30.06	0.53	298.46
YOR018W	*ROD1*	0.98	1.24	1.34	1.71	1.95	2.17	0.11	-0.60	7.66	1.14	7.77	0.54	303.14
YOR352W	*YOR352w*	0.98	1.32	1.51	1.91	2.09	2.27	0.04	-0.01	-0.20	0.55	-0.16	0.54	257.06
YOR019W	*YOR019w*	1.06	1.45	1.65	2.05	2.23	2.34	0.23	-0.18	5.78	0.73	6.01	0.55	284.45
YML058C-A	*Unknown*	0.97	0.97	1.56	1.94	2.10	2.26	13.07	1.95	1.00	-1.37	14.08	0.58	285.56
YOR040W	*GLO4*	0.99	1.40	1.66	2.10	2.26	2.38	0.22	0.06	9.49	0.53	9.71	0.59	275.85
YML020W	*YML020w*	0.95	0.95	1.43	1.89	2.08	2.31	1.23	1.73	-1.38	-1.13	-0.16	0.60	252.68
YPL147W	*PXA1*	1.02	1.43	1.65	2.13	2.27	2.41	1.30	0.20	14.83	0.41	16.13	0.61	288.92
YMR032W	*HOF1*	0.88	0.88	1.27	1.68	1.87	2.09	1.08	1.86	-1.52	-1.23	-0.44	0.63	202.13
YHR039C	*MSC7*	0.98	1.36	1.60	2.11	2.28	2.37	1.25	0.69	19.28	-0.05	20.53	0.64	260.59
YOR371C	*GPB1*	1.00	1.40	1.60	2.01	2.16	2.33	0.11	0.07	0.12	0.58	0.23	0.64	247.66
YGR194C	*XKS1*	0.96	1.25	1.43	1.88	2.06	2.20	0.11	0.00	10.65	0.65	10.76	0.65	281.13
YHR014W	*SPO13*	0.98	1.35	1.56	2.00	2.17	2.30	-0.09	-0.17	8.26	0.84	8.17	0.67	265.95
YLL024C	*SSA2*	0.92	1.21	1.44	1.82	1.98	2.19	1.37	1.15	4.79	-0.48	6.15	0.67	124.08
YLL025W	*PAU17*	0.91	1.20	1.44	1.82	1.97	2.18	1.33	1.11	5.97	-0.38	7.30	0.73	179.84
YGR206W	*MVB12*	0.97	1.22	1.36	1.78	2.02	2.18	0.16	0.09	13.98	0.65	14.14	0.74	266.89
YGR197C	*SNG1*	0.99	1.38	1.62	2.13	2.30	2.39	0.76	0.03	18.66	0.71	19.42	0.74	287.85
YLR079W	*SIC1*	1.02	1.17	1.31	1.62	1.80	2.04	0.97	1.01	7.89	-0.26	8.87	0.75	248.36
YNL295W	*YNL295w*	0.97	1.26	1.50	1.98	2.16	2.29	0.06	-0.07	10.01	0.84	10.07	0.77	268.26
YML081W	*YML081w*	1.01	1.01	1.55	1.93	2.10	2.26	12.68	2.07	2.02	-1.29	14.70	0.77	281.80
YHR043C	*DOG2*	0.98	1.30	1.47	1.96	2.17	2.32	1.97	-0.02	21.95	0.79	23.93	0.78	245.05
YAL022C	*FUN26*	0.89	1.09	1.25	1.53	1.70	1.94	2.21	1.20	16.63	-0.42	18.84	0.78	164.88
YPL197C	*YPL197c*	0.94	1.22	1.40	1.86	2.04	2.23	0.24	0.13	11.59	0.71	11.83	0.84	280.18
YDR349C	*YPS7*	0.96	1.24	1.41	1.74	1.91	2.11	0.05	-0.07	5.47	0.94	5.52	0.87	336.24
YIL119C	*RPI1*	0.99	1.18	1.41	1.94	2.13	2.31	0.60	0.39	2.48	0.50	3.08	0.89	218.05
YAL004W	*YAL004w*	0.90	1.20	1.41	1.73	1.88	2.10	3.61	0.94	25.85	-0.03	29.46	0.91	196.73
YHL016C	*DUR3*	0.94	1.22	1.40	1.91	2.09	2.23	0.05	0.02	8.21	0.90	8.27	0.91	282.80
YLR043C	*TRX1*	1.00	1.24	1.38	1.64	1.81	2.04	1.01	1.13	0.63	-0.20	1.64	0.93	199.41
YBR226C	*YBR226c*	0.94	1.19	1.33	1.78	1.99	2.14	0.05	-0.02	3.80	0.96	3.85	0.94	286.78
YGR051C	*YGR051c*	1.02	1.43	1.63	2.02	2.22	2.32	2.30	0.70	6.54	0.25	8.84	0.95	263.35
YAL049C	*AIM2*	0.94	1.23	1.43	1.82	1.98	2.19	1.79	1.28	13.10	-0.32	14.89	0.96	262.16
YMR026C	*PEX12*	0.99	0.99	1.51	1.91	2.07	2.24	1.29	2.49	-1.66	-1.51	-0.36	0.98	295.54
YOR014W	*RTS1*	0.97	1.27	1.43	1.78	1.98	2.14	0.15	-0.06	3.91	1.08	4.05	1.02	257.24
YAR029W	*YAR029w*	0.93	1.19	1.39	1.98	1.93	1.93	2.59	1.15	24.32	-0.13	26.91	1.02	212.87
YHR205W	*SCH9*	0.97	1.30	1.47	1.80	2.04	2.26	1.24	0.89	0.40	0.14	1.64	1.03	277.05
YOR021C	*YOR021c*	1.00	1.35	1.57	1.95	2.14	2.28	2.01	0.01	14.52	1.05	16.53	1.05	287.86
YNL307C	*MCK1*	0.90	1.26	1.39	1.81	2.05	2.23	1.19	0.71	1.02	0.35	2.21	1.06	252.60
YNL277W	*MET2*	0.87	1.22	1.38	1.78	2.00	2.16	1.15	0.81	0.13	0.25	1.27	1.06	249.17
YJR118C	*ILM1*	0.94	1.21	1.33	1.68	1.91	2.14	1.17	0.93	0.88	0.15	2.04	1.08	232.28
YNL285W	*YNL285w*	0.98	1.31	1.56	2.03	2.21	2.35	0.98	-0.27	22.80	1.35	23.78	1.09	277.75
YHR112C	*YHR112c*	0.97	1.21	1.40	1.97	2.19	2.33	2.26	1.03	28.76	0.06	31.03	1.09	270.31
YGR034W	*RPL26b*	0.94	1.22	1.35	1.79	2.04	2.20	0.57	0.88	0.61	0.22	1.18	1.10	260.61
YHR092C	*HXT4*	0.88	1.20	1.41	1.93	2.11	2.21	2.38	0.99	30.34	0.11	32.73	1.10	262.78
YGL020C	*GET1*	0.98	1.20	1.37	1.76	2.00	2.19	1.03	0.72	1.74	0.39	2.77	1.11	294.10
YBR215W	*HPC2*	0.93	1.21	1.37	1.89	2.11	2.27	0.16	0.12	4.15	0.99	4.32	1.11	286.66
YNL269W	*BSC4*	1.02	1.39	1.56	1.95	2.15	2.30	1.14	-0.07	5.32	1.19	6.47	1.11	260.78
YMR199W	*CLN1*	0.95	1.16	1.37	1.80	2.03	2.27	0.06	0.00	5.55	1.12	5.61	1.12	280.53
YMR182C	*RGM1*	0.98	1.20	1.40	1.88	2.11	2.32	1.79	0.18	8.52	0.97	10.30	1.15	285.47
YMR031W-A	*YMR031w-a*	0.90	0.90	1.00	1.31	1.54	1.82	1.31	1.60	-1.60	-0.44	-0.29	1.16	360.88
YMR031C	*YMR031c*	0.90	0.90	1.45	1.86	2.02	2.20	1.26	1.77	-1.57	-0.61	-0.30	1.16	277.75
YHR105W	*YPT35*	0.97	1.29	1.46	1.98	2.18	2.34	1.33	1.16	15.36	0.00	16.69	1.16	271.57
YIL094C	*LYS12*	0.93	1.24	1.46	1.82	2.01	2.15	0.60	0.57	1.33	0.61	1.93	1.18	298.64
YLR403W	*SFP1*	0.99	1.19	1.28	1.47	1.75	1.97	0.74	0.45	3.51	0.74	4.25	1.19	221.86
YGR199W	*PMT6*	1.01	1.46	1.69	2.12	2.25	2.39	-0.02	0.71	2.42	0.50	2.39	1.21	268.46
YMR214W	*SCJ1*	0.99	1.22	1.44	1.91	2.11	2.31	0.10	0.16	4.79	1.05	4.89	1.21	263.73
YAL056W	*GPB2*	0.89	1.14	1.36	1.72	1.90	2.13	1.39	0.68	13.27	0.53	14.66	1.22	76.77
YGR087C	*PDC6*	0.98	1.34	1.56	2.05	2.25	2.35	0.91	0.85	0.88	0.38	1.79	1.23	268.26
YBR258C	*SHG1*	0.94	1.16	1.34	1.87	2.10	2.23	0.06	0.06	0.52	1.17	0.58	1.23	294.22
YHR138C	*YHR138c*	0.89	1.18	1.34	1.84	2.05	2.20	1.14	1.05	9.33	0.19	10.47	1.24	275.74
YNL059C	*ARP5*	0.92	1.17	1.28	1.60	1.83	2.03	0.99	0.50	7.14	0.74	8.12	1.24	273.64
YKL166C	*TPK3*	0.99	1.28	1.48	1.97	2.16	2.30	1.13	0.74	0.59	0.54	1.72	1.28	274.24
YJL013C	*MAD3*	0.97	1.30	1.62	2.00	2.19	2.30	1.25	0.85	0.02	0.45	1.27	1.29	233.49
YMR009W	*ADI1*	0.93	0.93	1.36	1.81	1.97	2.17	1.46	1.24	-1.58	0.06	-0.12	1.30	290.89
YMR207C	*HFA1*	0.95	1.21	1.41	1.83	2.05	2.28	0.10	0.15	11.79	1.19	11.88	1.33	272.85
YLR083C	*EMP70*	0.91	1.17	1.35	1.74	1.93	2.16	1.06	0.95	0.98	0.38	2.04	1.33	180.88
YLL026W	*HSP104*	0.96	1.25	1.53	1.89	2.04	2.23	1.41	1.21	9.29	0.13	10.70	1.34	183.95
YHR156C	*LIN1*	0.90	1.17	1.33	1.84	2.05	2.19	0.88	1.17	4.53	0.18	5.41	1.34	293.55
YAL031C	*GIP4*	0.89	1.12	1.30	1.61	1.76	1.98	3.24	1.26	29.52	0.09	32.76	1.35	242.63
YPL123C	*RNY1*	1.00	1.24	1.40	1.90	2.09	2.31	0.09	-0.03	10.60	1.38	10.69	1.35	287.45
YFL007W	*BLM10*	0.97	1.31	1.55	1.91	2.11	2.32	0.79	0.78	7.49	0.57	8.27	1.35	276.52
YMR231W	*PEP5*	0.98	1.21	1.42	1.89	2.10	2.29	1.13	0.01	21.19	1.37	22.32	1.38	292.46
YMR233W	*TRI1*	0.95	1.14	1.34	1.79	2.03	2.25	0.14	0.09	8.97	1.29	9.11	1.38	281.16
YNL259C	*ATX1*	1.03	1.33	1.44	1.85	2.06	2.23	2.70	-0.41	28.41	1.84	31.12	1.43	299.16
YCR020C-A	*MAK31*	1.01	1.46	1.69	2.17	2.32	2.42	1.18	1.11	13.41	0.32	14.59	1.43	290.53
YEL031W	*SPF1*	0.98	1.23	1.33	1.73	1.95	2.11	1.91	0.05	20.37	1.40	22.27	1.45	196.59
YDR137W	*RGP1*	0.97	1.16	1.32	1.84	2.11	2.26	0.53	0.10	17.34	1.37	17.87	1.47	300.27
YHR203C	*RPS4b*	0.97	1.19	1.31	1.82	2.09	2.25	0.68	0.78	11.44	0.69	12.11	1.47	306.05
YCL056C	*YCL056c*	1.01	1.37	1.52	2.00	2.18	2.29	1.18	1.08	8.06	0.44	9.25	1.51	282.52
YHR080C	*YHR080c*	0.94	1.27	1.45	1.92	2.11	2.26	1.38	1.01	16.39	0.51	17.78	1.52	253.36
YKR102W	*FLO10*	0.91	1.12	1.33	1.78	2.01	2.19	0.81	0.84	8.32	0.69	9.12	1.52	289.67
YCL061C	*MRC1*	0.98	1.28	1.41	1.84	2.07	2.27	0.85	0.79	3.81	0.76	4.67	1.54	258.38
YPR072W	*NOT5*	0.90	1.08	1.19	1.56	1.78	1.96	1.42	0.68	14.33	0.91	15.75	1.59	293.84

ORF.name	Strain	Optical density at 600 nm at regular intervals (hours)						GLUCOSE		FRUCTOSE		TOTAL SUGARS (g/l)		TOTAL AMINO ACIDS (mg/L)
		0	26	33	48	59	78	102 h	118 h	102 h	118 h	102 h	118 h	102 h
YLR402W	YLR402w	1.02	1.35	1.57	1.99	2.15	2.31	1.01	0.93	3.68	0.67	4.70	1.60	256.33
YLL028W	TPO1	0.87	1.09	1.31	1.68	1.84	2.06	1.81	1.15	15.11	0.46	16.92	1.61	174.43
YBL093C	ROX3	0.92	1.16	1.26	1.56	1.79	1.99	1.22	0.85	8.73	0.76	9.96	1.61	254.69
YGR086C	PIL1	0.92	1.26	1.48	1.89	2.09	2.26	1.21	1.12	2.07	0.50	3.28	1.62	250.67
YDR186C	YDR186c	0.94	1.11	1.22	1.54	1.79	2.02	0.95	1.12	2.75	0.51	3.70	1.63	257.64
YHR100C	GEP4	0.90	1.17	1.29	1.69	1.95	2.09	0.99	1.19	5.18	0.46	6.17	1.65	239.80
YDR223W	CRF1	1.00	1.42	1.63	2.07	2.22	2.35	1.08	1.12	2.10	0.54	3.18	1.66	259.23
YMR144W	YMR144w	0.89	0.99	1.19	1.71	1.97	2.22	-0.05	0.07	0.44	1.60	0.39	1.67	253.58
YPL108W	YPL108w	0.93	1.19	1.37	1.88	2.08	2.26	-0.07	-0.05	0.61	1.72	0.53	1.67	254.47
YHL035C	VMR1	0.93	1.21	1.40	1.89	2.09	2.20	0.15	0.33	11.09	1.35	11.24	1.68	281.51
YDL118W	YDL118w	0.97	1.36	1.53	1.89	2.10	2.28	1.32	1.14	7.95	0.55	9.26	1.68	260.04
YGR212W	SLI1	0.90	1.19	1.40	1.96	2.13	2.24	0.11	0.03	10.33	1.66	10.44	1.69	273.25
YMR191W	SPG5	0.94	1.15	1.34	1.83	2.02	2.18	0.92	0.80	14.28	0.90	15.21	1.70	287.79
YJL016W	YJL016w	0.95	1.23	1.39	1.80	2.05	2.28	0.87	0.70	3.81	1.01	4.68	1.71	232.20
YGL062W	PYC1	0.94	1.35	1.49	1.83	2.04	2.20	1.21	1.01	2.90	0.72	4.11	1.73	238.82
YGR079W	YGR079w	1.02	1.36	1.56	2.06	2.25	2.33	1.03	1.04	4.69	0.69	5.71	1.73	270.13
YKL010C	UFD4	0.98	1.36	1.61	2.04	2.19	2.32	1.01	0.96	6.99	0.78	7.99	1.74	292.45
YPL148C	PPT2	0.94	1.16	1.39	1.88	2.10	2.27	1.18	0.66	9.39	1.08	10.57	1.75	268.10
YMR058W	FET3	0.95	1.18	1.38	1.75	1.96	2.15	0.85	0.96	8.19	0.78	9.04	1.75	278.14
YIL098C	FMC1	0.96	1.20	1.43	1.86	2.05	2.21	1.35	0.59	16.27	1.17	17.62	1.75	281.87
YBR213W	MET8	1.01	1.44	1.72	2.22	2.50	2.54	0.12	0.15	6.42	1.63	6.53	1.77	284.54
YPL186C	UIP4	0.89	1.16	1.37	1.92	2.09	2.26	3.30	0.06	29.51	1.72	32.81	1.78	301.54
YLR218C	YLR218c	0.89	1.23	1.43	1.78	2.00	2.16	1.41	1.47	2.59	0.34	4.00	1.81	223.54
YHR044C	DOG1	0.95	1.33	1.53	2.03	2.20	2.33	1.09	0.50	15.78	1.33	16.87	1.83	255.07
YPL247C	YPL247c	0.96	1.26	1.49	1.98	2.14	2.30	0.64	-0.04	20.73	1.87	21.37	1.83	269.96
YMR269W	TMA23	0.94	1.21	1.31	1.73	2.00	2.20	1.33	0.82	9.32	1.04	10.65	1.86	242.77
YDR374C	YDR374c	1.01	1.42	1.62	2.08	2.21	2.34	1.48	0.02	23.44	1.84	24.92	1.86	296.76
YHL037C	YHL037c	1.03	1.44	1.66	2.17	2.34	2.41	1.20	-0.01	26.19	1.87	27.39	1.86	296.39
YCR016W	YCR016w	0.95	1.22	1.34	1.73	1.87	2.02	0.93	0.90	3.88	0.97	4.81	1.87	267.63
YDR528W	HLR1	0.86	1.10	1.26	1.61	1.81	1.87	1.35	0.68	19.35	1.19	20.70	1.87	294.05
YDR092W	UBC13	1.00	1.31	1.50	2.00	2.19	2.34	0.11	0.18	7.16	1.70	7.27	1.88	263.98
YAL061W	BDH2	0.94	1.25	1.49	1.88	2.02	2.21	2.68	1.22	21.40	0.69	24.09	1.91	160.85
YBR151W	APD1	0.91	1.13	1.32	1.74	1.99	2.17	0.88	1.10	2.41	0.81	3.28	1.92	259.72
YBR120C	CBP6	0.92	1.07	1.24	1.55	1.78	1.99	0.74	0.77	3.62	1.17	4.36	1.94	284.42
YFL013C	IES1	0.93	1.21	1.42	1.75	1.94	2.10	0.79	0.74	6.44	1.24	7.23	1.97	242.86
YOR066W	MSA1	1.04	1.48	1.72	2.08	2.25	2.36	0.16	-0.02	8.87	2.01	9.02	1.98	267.02
YMR232W	FUS2	0.91	1.06	1.24	1.71	1.94	2.18	0.68	0.01	11.41	1.98	12.09	1.99	275.61
YDR124W	YDR124w	0.88	1.16	1.33	1.78	1.85	2.00	1.23	1.20	3.71	0.79	4.94	1.99	244.96
YLL009C	COX17	0.90	1.22	1.47	1.83	1.97	2.17	1.95	1.20	19.19	0.81	21.14	2.01	261.13
YOR081C	TGL5	0.99	1.31	1.50	1.89	2.11	2.27	0.02	-0.21	9.44	2.25	9.47	2.04	279.24
YPL010W-A	AUA1	0.89	1.13	1.31	1.68	1.90	2.13	1.09	0.81	16.97	1.28	18.06	2.08	280.03
YEL044W	IES6	0.86	1.05	1.12	1.33	1.50	1.71	1.13	0.45	19.39	1.66	20.53	2.10	323.38
YCR026C	NPP1	0.91	1.28	1.40	1.69	1.98	2.27	1.63	0.75	25.32	1.42	26.95	2.17	298.26
YLL014W	EMC6	0.90	1.14	1.37	1.70	1.85	2.07	2.29	1.19	22.12	1.00	24.41	2.19	239.96
YGL248W	PDE1	1.00	1.34	1.47	1.99	2.19	2.35	1.15	1.00	4.85	1.20	5.99	2.19	271.71
YBR221C	PDB1	0.92	1.12	1.29	1.83	2.00	2.18	0.26	0.04	11.36	2.16	11.62	2.20	287.50
YBR114W	RAD16	0.98	1.33	1.60	2.05	2.23	2.36	0.75	0.71	3.08	1.50	3.83	2.21	265.39
YNL119W	NCS2	1.02	1.16	1.33	1.88	2.13	2.30	0.79	0.55	13.65	1.69	14.44	2.24	321.22
YLL012W	YEH1	0.91	1.21	1.42	1.74	1.87	2.09	2.55	1.17	24.63	1.08	27.18	2.25	160.15
YMR295C	YMR295c	0.92	1.25	1.44	1.85	2.08	2.25	1.55	1.26	6.63	1.00	8.18	2.26	246.03
YDR520C	URC2	1.04	1.49	1.74	2.16	2.30	2.40	0.83	0.80	2.03	1.46	2.86	2.26	253.94
YNL084C	END3	0.93	1.15	1.34	1.73	1.94	2.10	1.15	0.90	9.10	1.36	10.24	2.27	270.80
YDL129W	YDL129w	0.95	1.33	1.48	1.94	2.00	2.10	1.24	1.19	4.28	1.08	5.52	2.27	241.31
YNL070W	TOM7	0.89	0.99	1.15	1.78	1.92	1.98	0.91	0.68	10.11	1.59	11.02	2.27	281.37
YCL026C	Unknown	0.98	1.34	1.54	1.98	2.18	2.28	1.82	0.79	21.28	1.50	23.10	2.29	304.01
YHL031C	GOS1	0.97	1.28	1.50	1.99	2.17	2.33	0.56	0.04	15.38	2.25	15.94	2.29	279.67
YBR078W	ECM33	0.92	1.16	1.38	1.80	2.01	2.18	1.11	0.74	9.19	1.62	10.30	2.36	239.21
YDR417C	YDR417c	0.88	1.07	1.12	1.36	1.56	1.76	1.16	0.43	19.99	1.97	21.15	2.40	323.97
YGL023C	PIB2	0.90	1.20	1.40	1.74	1.96	2.15	1.15	0.79	5.39	1.63	6.55	2.42	279.16
YKR040C	YKR040c	0.89	1.05	1.23	1.73	1.97	2.17	0.87	0.54	15.10	1.90	15.97	2.43	287.76
YCR037C	PHO87	0.92	1.32	1.54	1.88	2.05	2.19	1.34	1.20	13.72	1.29	15.05	2.49	239.75
YHR139C	SPS100	0.91	1.23	1.40	1.97	2.16	2.26	1.32	1.09	12.83	1.41	14.16	2.51	286.10
YJL200C	ACO2	0.97	1.28	1.49	1.91	2.07	2.28	1.00	1.06	8.57	1.47	9.56	2.53	277.48
YPL125W	KAP120	0.94	1.20	1.39	1.88	2.06	2.21	0.58	-0.04	18.63	2.57	19.21	2.53	290.56
YCL024W	KCC4	0.96	1.31	1.48	1.96	2.15	2.24	1.61	1.09	18.38	1.46	19.99	2.55	306.93
YJL004C	SYS1	0.91	1.09	1.23	1.57	1.86	2.06	1.16	0.77	20.14	1.79	21.30	2.55	293.16
YMR234W	RNH1	0.93	1.08	1.26	1.73	1.97	2.20	0.02	0.13	6.01	2.43	6.03	2.56	271.45
YBR284W	YBR284w	0.92	1.30	1.42	1.82	2.02	2.14	0.85	0.72	3.96	1.86	4.81	2.57	236.44
YJR047C	ANB1	0.90	1.02	1.12	1.45	1.71	1.90	1.25	0.81	17.90	1.77	19.15	2.58	273.98
YGL132W	YGL132w	0.93	1.16	1.38	1.90	2.16	2.33	0.80	0.79	5.12	1.83	5.92	2.62	249.84
YLR221C	RSA3	0.97	1.22	1.40	1.84	2.04	2.19	1.12	1.05	14.46	1.57	15.58	2.62	292.37
YJR030C	YJR030c	0.91	1.28	1.43	1.79	1.98	2.15	0.72	0.75	8.36	1.88	9.08	2.63	298.56
YLR023C	IZH3	1.08	1.48	1.72	2.02	2.21	2.36	1.39	1.14	-1.60	1.51	-0.21	2.64	121.68
YPL214C	THI6	1.08	1.45	1.64	2.03	2.19	2.34	-0.21	-0.18	5.47	2.83	5.27	2.65	267.97
YJR040W	GEF1	0.96	1.16	1.30	1.78	1.98	2.09	1.45	0.77	20.81	1.88	22.26	2.66	269.46
YML027W	YOX1	0.97	1.27	1.52	1.98	2.14	2.29	1.02	0.92	14.55	1.74	15.57	2.66	276.33
YGL029W	CGR1	0.85	1.08	1.20	1.65	1.89	2.05	1.41	0.79	13.96	1.87	15.37	2.66	264.10
YHL042W	YHL042w	0.98	1.35	1.55	2.01	2.16	2.30	0.79	0.02	24.23	2.65	25.02	2.67	293.11
YOR008C-A	YOR008c-a	0.94	1.14	1.28	1.73	1.94	2.04	1.47	0.95	18.36	1.73	19.83	2.68	298.61
YCR045C	RRT12	0.91	1.28	1.40	1.73	1.91	2.06	0.88	0.63	16.85	2.07	17.73	2.69	272.03
YOR011W	AUS1	0.97	1.34	1.57	1.98	2.16	2.30	0.10	1.31	1.89	1.38	1.98	2.70	251.62
YCR044C	PER1	0.90	1.02	1.11	1.41	1.68	1.88	2.24	0.63	26.26	2.07	28.49	2.70	273.89
YBR201W	DER1	0.93	1.18	1.36	1.84	1.91	2.06	0.01	-0.02	8.70	2.75	8.71	2.73	276.98
YNR050C	LYS9	0.91	1.27	1.37	1.63	1.82	2.00	1.37	1.29	8.07	1.45	9.44	2.74	303.86
YPL246C	RBD2	0.95	1.23	1.43	1.84	1.99	2.16	1.12	-0.02	27.57	2.77	28.70	2.75	296.42
YKL084W	HOT13	0.93	1.22	1.39	1.87	2.15	2.15	0.93	1.09	8.28	1.66	9.21	2.75	266.73
YER179W	DMC1	0.85	1.02	1.11	1.43	1.67	1.89	0.71	0.80	13.82	1.96	14.53	2.76	265.91
YFL033C	RIM15	0.91	1.14	1.34	1.78	2.04	2.20	0.68	0.74	5.55	2.03	6.24	2.77	257.26
YBR241C	YBR241c	1.01	1.25	1.44	1.98	2.21	2.36	0.29	0.14	16.43	2.63	16.72	2.77	300.90
YKL062W	MSN4	1.05	1.38	1.59	2.09	2.24	2.35	0.98	0.97	5.23	1.81	6.22	2.78	275.95
YPL077C	YPL077c	1.03	1.38	1.56	1.98	2.17	2.30	1.03	0.97	4.37	1.84	5.40	2.81	275.80
YEL037C	RAD23	0.92	1.19	1.34	1.83	2.05	2.17	0.38	0.15	15.85	2.66	16.23	2.81	278.32
YLR257W	YLR257w	1.04	1.39	1.61	2.03	2.19	2.35	1.10	1.09	3.74	1.73	4.84	2.82	287.98
YDR459C	PFA5	1.05	1.45	1.65	2.03	2.23	2.32	0.89	0.75	13.69	2.07	14.58	2.82	301.10
YPL248C	GAL4	0.93	1.23	1.45	1.93	2.09	2.25	-0.07	1.50	3.21	1.32	3.14	2.82	273.44
YLL023C	POM33	0.91	1.20	1.43	1.79	1.93	2.13	1.53	1.12	8.13	1.70	9.65	2.82	157.38
YLR063W	YLR063w	0.99	1.31	1.56	1.97	2.10	2.33	1.01	1.19	2.61	1.64	3.63	2.83	156.86
YBR100W	YBR100W	0.96	1.25	1.51	1.95	2.16	2.31	0.74	0.73	9.69	2.11	10.43	2.84	293.95
YLR414C	PUN1	0.98	1.30	1.46	1.86	2.03	2.23	1.12	1.06	8.61	1.79	9.73	2.85	288.32
YLR286C	CTS1	0.93	1.03	1.11	1.59	1.52	1.67	1.71	0.84	16.98	2.01	18.69	2.85	248.48
YPL220W	RPL1a	0.97	1.39	1.59	2.06	2.18	2.33	0.36	0.10	13.38	2.77	13.75	2.86	290.64
YMR204C	INP1	1.04	1.30	1.55	2.00	2.19	2.37	0.55	0.22	8.41	2.65	8.96	2.87	274.96
YDR105C	TMS1	1.05	1.40	1.57	1.98	2.17	2.32	0.47	0.16	15.32	2.71	15.78	2.87	283.50
YGR217W	CCH1	0.96	1.29	1.50	2.01	2.20	2.31	0.99	0.46	23.45	2.43	24.44	2.89	275.29
YKL002W	DID4	0.87	1.15	1.27	1.61	1.77	1.91	1.22	0.79	13.46	2.11	14.68	2.90	248.61
YLR382C	NAM2	0.90	1.11	1.28	1.67	1.90	2.05	0.59	0.82	8.59	2.10	9.18	2.92	267.64
YFR030W	MET10	0.93	1.15	1.38	1.85	2.08	2.24	0.99	0.67	17.11	2.25	18.09	2.92	298.89
YAL043C-a	Unknown	0.90	1.14	1.35	1.69	1.84	2.04	3.75	1.19	26.55	1.74	30.30	2.93	200.02
YCR025C	YCR025c	0.90	1.30	1.43	1.84	1.75	1.92	2.00	0.74	30.23	2.21	32.23	2.94	307.89
YJL071W	ARG2	0.92	1.28	1.38	1.64	1.85	2.10	1.17	1.21	4.00	1.74	5.17	2.95	260.36
YLL006W	MMM1	0.90	1.30	1.47	1.92	2.18	2.34	0.93	1.01	9.69	1.96	10.62	2.97	260.85
YNL003C	PET8	0.89	1.11	1.34	1.75	1.95	2.10	1.09	0.71	5.72	2.27	6.81	2.98	282.09
YBR199W	KTR4	1.00	1.18	1.30	1.80	2.04	2.22	0.02	-0.02	13.00	3.00	13.03	2.98	288.45
YBR083W	TEC1	0.90	1.12	1.32	1.75	1.93	2.13	0.77	0.66	9.49	2.32	10.26	2.98	280.48
YNL053W	MSG5	1.01	1.27	1.44	1.97	2.20	2.35	0.52	0.02	20.58	2.97	21.09	2.98	279.89
YDR092W	UBC13	0.93	1.24	1.34	1.69	1.92	2.13	1.27	0.85	5.56	2.15	6.82	3.00	229.29
YPL162C	YPL162c	1.09	1.52	1.72	2.22	2.36	2.49	0.47	0.16	18.59	2.84	19.05	3.01	301.67
YPL121C	MEI5	1.01	1.37	1.60	2.05	2.19	2.33	1.05	-0.12	23.07	3.13	24.12	3.01	290.64
YKL160W	ELF1	1.04	1.40	1.59	2.07	2.25	2.38	0.92	0.93	7.62	2.09	8.54	3.02	290.78
YNL067W-B	YNL067w-b	0.94	1.22	1.39	1.76	2.02	2.20	0.93	0.63	9.12	2.41	10.05	3.04	261.19
YPL201C	YIG1	1.02	1.42	1.57	1.96	2.12	2.30	0.75	0.10	18.13	2.95	18.88	3.05	299.82
YNL303W	YNL303w	1.01	1.32	1.57	1.97	2.13	2.31	1.53	0.05	30.18	3.00	31.70	3.05	282.68
YPL212C	PUS1	1.03	1.45	1.70	2.17	2.29	2.44	0.10	-0.18	6.08	3.24	6.18	3.06	268.07
YCR021C	HSP30	0.99	1.38	1.58	2.02	2.17	2.25	1.06	1.08	9.72	1.99	10.78	3.07	286.77
YLR374C	YLR374c	0.93	1.31	1.41	1.75	1.93	2.13	1.11	0.89	9.00	2.20	10.10	3.09	269.70
YLL017W	YLL017w	0.91	1.19	1.39	1.74	1.91	2.13	1.35	1.05	9.74	2.05	11.09	3.10	206.48
YNL011C	YNL011c	0.97	1.31	1.52	1.90	2.10	2.27	1.27	0.59	10.04	2.51	11.31	3.10	256.90
YOR012W	YOR012w	0.99	1.29	1.50	1.92	2.12	2.29	0.29	0.09	10.80	3.03	11.08	3.11	270.36
YKR095W	MLP1	0.90	1.07	1.26	1.74	1.96	2.15	1.03	0.75	16.15	2.36	17.18	3.11	279.82
YHL030W	ECM29	0.86	1.09	1.21	1.45	1.68	1.87	1.32	1.36	4.56	1.76	5.87	3.11	293.16
YOR042W	CUE5	0.99	1.38	1.63	2.04	2.22	2.35	0.11	0.04	6.68	3.07	6.79	3.11	278.32
YKL086W	SRX1	0.94	1.18	1.31	1.71	1.91	2.04	0.65	1.20	9.34	1.93	9.99	3.13	281.77
YCR009C	RVS161	0.93	1.13	1.23	1.61	1.84	1.93	1.26	1.17	3.75	1.97	5.02	3.14	263.26
YPR043W	RPL43a	0.90	1.02	1.12	1.50	1.78	2.02	0.75	0.57	6.29	2.58	7.03	3.14	236.53
YOR343C	YOR343c	1.03	1.35	1.63	2.10	2.26	2.40	0.09	0.10	5.32	3.07	5.41	3.17	261.35

ORF.name	Strain	Optical density at 600 nm at regular intervals (hours)						GLUCOSE		FRUCTOSE		TOTAL SUGARS (g/l)		TOTAL AMINO ACIDS (mg/L)
		0	26	33	48	59	78	102 h	118 h	102 h	118 h	102 h	118 h	102 h
YDR513W	GRX2	0.98	1.34	1.55	1.99	2.19	2.30	0.79	0.76	4.41	2.42	5.20	3.18	271.06
YDR451C	YHP1	0.95	1.37	1.59	2.04	2.26	2.38	2.13	0.86	25.70	2.34	27.83	3.19	286.01
YGR066C	YGR066c	1.00	1.40	1.60	2.03	2.21	2.29	0.77	0.74	5.98	2.46	6.75	3.20	257.26
YHL028W	WSC4	1.00	1.33	1.48	1.95	2.13	2.27	0.29	0.02	17.95	3.18	18.24	3.20	285.61
YOR323C	PRO2	0.86	1.13	1.25	1.51	1.74	1.99	1.41	1.25	3.42	1.98	4.83	3.23	331.36
YLR455W	YLR455w	0.89	1.08	1.27	1.81	2.36	2.16	0.72	0.73	3.79	2.51	4.51	3.23	262.02
YDR441C	APT2	0.89	1.34	1.55	1.93	2.15	2.24	1.37	0.59	19.53	2.67	20.91	3.27	295.07
YOR083W	WHI5	0.98	1.31	1.48	1.92	2.13	2.30	0.12	-0.05	16.30	3.33	16.42	3.28	270.58
YPL130W	SPO19	0.89	1.06	1.15	1.63	1.83	2.06	0.33	0.07	18.69	3.22	19.02	3.30	313.89
YGR161W-C	YGR161w-c	0.87	1.19	1.36	1.67	1.88	2.03	1.60	0.81	16.88	2.51	20.48	3.32	258.44
YER181C	YER181c	0.92	1.08	1.17	1.81	1.67	1.81	0.57	1.03	13.49	2.29	14.07	3.32	302.90
YBR191W	RPL21a	0.89	0.97	1.06	1.46	1.67	1.90	0.81	0.99	13.76	2.34	14.58	3.33	285.71
YCR019W	MAK32	0.90	1.14	1.30	1.78	2.00	2.14	1.25	1.14	3.77	2.22	5.01	3.36	274.96
YKL093W	MBR1	0.97	1.31	1.48	1.88	2.06	2.20	0.88	1.06	6.10	2.30	6.98	3.36	270.38
YKL055C	OAR1	0.96	1.31	1.56	2.02	2.17	2.27	0.58	0.58	5.46	2.79	6.05	3.38	266.98
YLL038C	ENT4	0.88	1.05	1.26	1.64	1.82	2.05	1.35	1.09	0.44	2.28	1.79	3.38	153.84
YKL032C	IXR1	1.00	1.41	1.70	2.17	2.31	2.44	1.06	0.97	7.22	2.42	8.27	3.38	252.02
YPR083W	MDM36	0.93	1.25	1.45	1.93	2.11	2.23	0.46	0.18	16.23	3.21	16.69	3.39	281.08
YLL015W	BPT1	0.89	1.16	1.38	1.72	1.85	2.06	2.23	1.37	24.53	2.03	26.76	3.40	224.91
YLR189C	ATG26	1.07	1.44	1.67	2.11	2.27	2.40	0.84	0.86	8.81	2.55	9.65	3.40	278.75
YHR158C	KEL1	0.88	1.08	1.19	1.92	2.20	2.30	1.10	0.92	17.04	2.50	18.14	3.43	288.51
YPL216W	YPL216w	0.86	1.07	1.22	1.85	2.04	2.23	0.33	-0.10	13.32	3.53	13.66	3.43	286.14
YBR214W	SDS24	0.94	1.19	1.38	1.86	2.07	2.21	0.15	0.07	9.02	3.38	9.17	3.44	295.25
YLR371W	ROM2	0.99	1.28	1.39	1.72	1.91	2.07	1.41	0.81	19.90	2.63	21.31	3.45	253.64
YOR338W	YOR338w	1.01	1.28	1.49	1.95	2.13	2.31	0.16	0.12	4.68	3.33	4.84	3.45	264.26
YER076C	YER076c	0.94	1.32	1.52	1.93	2.12	2.26	1.24	0.85	10.95	2.60	12.19	3.46	232.79
YLL010C	PSR1	0.89	1.10	1.28	1.60	1.75	1.96	3.19	1.13	30.02	2.36	33.22	3.49	192.13
YCR050C	YCR050c	0.86	1.19	1.29	1.64	1.85	2.03	1.28	0.74	23.23	2.76	24.51	3.50	303.13
YMR247C	RKR1	0.93	1.04	1.18	1.64	1.88	2.14	-0.08	0.04	10.69	3.50	10.61	3.53	285.32
YOL047C	YOL047c	0.93	1.18	1.41	1.94	2.10	2.29	0.81	-0.32	21.11	3.86	21.92	3.54	275.61
YPL189W	GUP2	0.94	1.12	1.30	1.87	2.08	2.28	1.06	0.84	13.34	2.70	14.40	3.54	273.69
YCL026C-B	HBN1	0.88	1.16	1.33	1.75	2.03	2.20	0.50	0.21	7.41	3.37	7.91	3.58	244.39
YFL011W	HXT10	0.93	1.33	1.50	1.96	2.04	2.09	1.67	1.25	22.97	2.38	24.63	3.63	284.64
YIL066C	RNR3	0.98	1.16	1.34	1.74	2.00	2.17	1.22	0.83	7.39	2.83	8.61	3.66	246.49
YGR107W	YGR107w	1.08	1.53	1.73	2.08	2.26	2.34	1.01	0.97	7.13	2.69	8.14	3.66	268.04
YPL222W	FMP40	1.04	1.42	1.63	2.04	2.20	2.34	0.49	-0.05	14.81	3.73	15.30	3.68	296.01
YML055W	SPC2	0.89	1.26	1.44	1.88	2.13	2.32	1.02	0.82	12.84	2.86	13.86	3.69	255.91
YNL153C	GIM3	0.97	1.21	1.39	1.91	2.01	2.12	1.22	0.83	12.42	2.86	13.64	3.69	245.01
YJL136C	RPS21b	0.92	1.07	1.23	1.67	1.89	2.09	0.81	0.49	13.89	3.21	14.70	3.70	284.82
YKL037W	AIM26	1.00	1.30	1.47	1.99	2.18	2.30	1.20	0.79	12.88	3.01	14.08	3.80	270.15
YPL163C	SVS1	1.02	1.42	1.62	2.09	2.23	2.36	0.74	0.02	16.40	3.79	17.14	3.80	299.25
YHR204W	MNL1	0.96	1.29	1.50	1.96	2.15	2.26	1.20	0.74	19.01	3.08	20.21	3.81	312.21
YDL055C	GPP1	0.87	1.05	1.22	1.65	1.89	2.06	0.72	0.80	5.79	3.03	6.52	3.83	272.35
YPL262W	FUM1	1.00	1.45	1.72	2.15	2.26	2.40	0.18	1.62	10.01	2.22	10.18	3.84	272.45
YLR304C	ACO1	0.87	1.06	1.17	1.60	1.80	2.02	1.03	0.63	15.76	3.21	16.80	3.84	266.93
YAL030W	SNC1	0.91	1.14	1.33	1.71	1.85	2.08	3.57	1.41	23.15	2.46	26.72	3.86	236.59
YEL043W	YEL043w	0.98	1.38	1.59	2.05	2.21	2.31	0.61	0.02	24.18	3.85	24.80	3.87	282.42
YCR087C-A	YCR087c-a	0.90	1.19	1.28	1.57	1.79	1.96	0.85	0.51	10.59	3.39	11.43	3.90	280.72
YMR245W	YMR245w	0.96	1.07	1.23	1.73	1.99	2.23	1.50	0.07	30.01	3.85	31.51	3.91	302.63
YBR222C	PCS60	0.90	1.03	1.10	1.56	1.85	2.05	0.36	0.04	22.24	3.88	22.60	3.92	302.59
YLR206W	ENT2	0.93	1.15	1.31	1.79	2.00	2.16	1.15	0.95	12.62	2.98	13.77	3.93	275.62
YOR291W	YPK9	0.96	1.22	1.42	1.83	1.99	2.21	0.50	-0.01	17.75	3.94	18.25	3.93	293.28
YKL198C	PTK1	0.97	1.33	1.49	1.90	2.10	2.27	1.60	0.75	20.03	3.20	21.63	3.95	278.39
YPL145C	KES1	1.00	1.37	1.56	2.03	2.17	2.29	2.44	0.09	18.18	3.88	20.62	3.96	299.62
YHR178W	STB5	0.91	1.16	1.28	1.93	2.01	2.21	1.14	1.05	9.43	2.94	10.56	3.98	284.51
YCR030C	SYP1	0.91	1.16	1.37	1.85	2.07	2.24	0.81	0.63	14.26	3.35	15.06	3.98	277.67
YNL056W	OCA2	1.06	1.22	1.44	2.02	2.25	2.42	2.04	0.67	11.08	3.34	13.12	4.01	288.75
YDL128W	VCX1	0.90	1.29	1.44	1.81	2.00	2.19	1.86	1.32	22.43	2.71	24.29	4.03	276.69
YLR053C	YLR053c	0.95	1.22	1.43	1.84	2.01	2.22	1.02	1.06	-0.07	2.98	0.95	4.04	150.67
YGL104C	VPS73	1.06	1.45	1.69	2.12	2.28	2.35	0.76	0.68	3.93	3.37	4.69	4.05	256.89
YNR036C	MRPS12	0.90	1.28	1.45	1.79	2.00	2.18	1.36	1.04	12.21	3.02	13.58	4.06	272.47
YLR449W	FPR4	0.90	1.25	1.44	1.84	2.19	2.16	1.72	1.29	23.29	2.78	25.01	4.07	253.03
YGR214W	RPS0a	0.95	1.20	1.33	1.93	2.19	2.31	1.87	0.32	31.88	3.76	33.75	4.08	291.99
YNR058W	BIO3	0.99	1.42	1.62	1.98	2.18	2.31	1.78	1.34	21.96	2.74	23.74	4.08	258.70
YOR334W	MRS2	1.01	1.36	1.54	1.91	2.08	2.22	0.45	0.12	15.89	3.98	16.34	4.10	269.89
YPL219W	PCL8	1.06	1.46	1.67	2.12	2.26	2.41	0.22	-0.19	14.49	4.30	14.71	4.11	290.66
YCR014C	POL4	0.91	1.18	1.40	1.95	2.16	2.26	1.23	1.07	8.94	3.05	10.17	4.12	277.39
YAL014C	SYN8	0.94	1.12	1.31	1.71	1.87	2.09	3.77	1.31	28.30	2.83	32.06	4.13	210.20
YPL113C	YPL113c	1.01	1.37	1.59	2.10	2.22	2.38	0.91	0.22	20.65	3.94	21.56	4.16	292.83
YBR227C	MCX1	0.93	1.23	1.40	1.87	2.07	2.21	0.34	0.05	16.56	4.11	16.90	4.16	290.82
YHR081W	LRP1	1.04	1.30	1.43	1.92	2.13	2.27	1.80	1.03	22.86	3.15	24.66	4.18	261.57
YJR109C	CPA2	0.95	1.32	1.40	1.71	1.94	2.09	1.30	1.35	12.77	2.88	14.07	4.23	267.90
YNL318C	HXT14	1.04	1.27	1.46	1.90	2.08	2.28	1.46	0.18	30.43	4.06	31.89	4.24	289.94
YHR049W	FSH1	0.99	1.35	1.64	2.17	2.33	2.41	0.97	1.58	20.20	2.66	21.17	4.25	262.57
YMR210W	YMR210w	0.95	1.14	1.35	1.85	2.05	2.25	0.58	0.15	18.87	4.11	19.45	4.25	280.04
YHL005C	YHL005c	0.85	1.08	1.16	1.41	1.60	1.81	1.38	1.41	11.80	2.85	13.18	4.26	294.52
YNL275W	BOR1	1.08	1.50	1.74	2.10	2.26	2.34	0.53	-0.05	17.64	4.35	18.17	4.29	269.28
YKR096W	YKR096w	0.89	1.04	1.20	1.61	1.87	2.07	1.02	0.77	14.55	3.52	15.57	4.30	270.13
YKL102C	YKL102c	0.94	1.25	1.42	1.92	2.11	2.23	0.72	0.95	11.15	3.38	11.88	4.33	275.22
YNL325C	FIG4	1.10	1.44	1.71	2.14	2.31	2.45	1.60	1.35	30.69	3.00	32.29	4.34	304.36
YJL196C	ELO1	1.03	1.35	1.56	1.99	2.14	2.29	0.89	1.06	9.54	3.32	10.44	4.38	257.19
YKL044W	YKL044w	0.99	1.27	1.47	2.04	2.24	2.33	0.79	0.76	7.00	3.65	7.79	4.41	285.95
YIL018W	RPL2b	0.94	1.11	1.26	1.65	1.91	2.10	1.27	0.83	8.19	3.59	9.46	4.42	254.37
YBL039C	URA7	0.87	1.21	1.29	1.66	1.87	2.02	1.39	0.97	25.99	3.45	27.38	4.42	260.51
YPL182C	YPL182c	0.87	1.11	1.23	1.68	1.82	2.05	0.24	0.16	11.48	4.27	11.72	4.43	315.88
YLL032C	YLL032c	0.91	1.15	1.39	1.75	1.90	2.11	1.76	1.17	11.13	3.35	12.89	4.52	135.24
YDR173C	ARG82	0.93	1.32	1.40	1.84	2.00	2.16	1.31	1.14	12.95	3.42	14.25	4.56	246.83
YOR050C	YOR050c	0.96	1.36	1.61	2.00	2.15	2.29	0.37	0.28	16.79	4.29	17.16	4.57	280.11
YER177W	BMH1	0.85	1.00	1.06	1.29	1.49	1.67	1.75	0.79	28.12	3.78	29.87	4.57	297.58
YCR005C	CIT2	0.98	1.28	1.44	1.89	2.11	2.22	1.99	1.12	29.19	3.47	31.18	4.59	305.66
YFL033C	RIM15	1.00	1.26	1.46	1.90	2.10	2.23	2.22	0.68	24.96	3.92	27.18	4.59	295.54
YPL171C	OYE3	0.97	1.30	1.51	2.04	2.19	2.35	0.62	0.19	21.78	4.41	22.40	4.60	293.10
YLR331C	YLR331c	0.98	1.27	1.49	1.91	2.05	2.12	1.29	0.83	17.52	3.78	18.81	4.61	286.52
YLR207W	HRD3	0.98	1.27	1.46	1.85	2.05	2.21	1.03	1.04	9.23	3.60	10.26	4.63	275.19
YGR011W	YGR011w	1.05	1.32	1.44	1.89	2.09	2.26	1.20	0.97	10.00	3.68	11.20	4.65	284.53
YLR346C	YLR346c	0.90	1.05	1.22	1.72	1.91	2.10	2.06	0.81	31.14	3.85	33.21	4.66	290.63
YHR183W	GND1	0.92	1.19	1.39	1.72	1.93	2.07	1.58	1.51	14.63	3.16	16.22	4.66	276.39
YDL130W	RPP1b	1.02	1.33	1.47	1.91	2.16	2.34	1.28	0.84	23.10	3.83	24.39	4.67	303.93
YOR100C	CRC1	1.11	1.53	1.76	2.19	2.36	2.43	1.32	1.08	20.10	3.61	21.42	4.69	295.69
YER184C	YER184c	0.90	1.07	1.17	1.59	2.05	1.98	0.63	0.75	17.42	3.96	18.04	4.71	278.25
YPL245W	YPL245w	0.99	1.31	1.53	2.01	2.15	2.29	1.15	-0.03	26.53	4.74	27.68	4.71	280.53
YKL096W-A	CWP2	0.87	1.02	1.17	1.59	1.82	1.99	1.10	0.68	16.64	4.06	17.74	4.73	287.39
YNL283C	WSC2	0.98	1.29	1.54	1.98	2.16	2.29	1.48	0.04	28.14	4.70	29.61	4.74	267.09
YNL204C	SPS18	0.91	1.41	1.52	1.82	2.00	2.15	2.83	3.09	6.21	1.65	9.04	4.74	287.16
YDR192C	NUP42	0.91	1.10	1.21	1.63	1.82	2.02	1.23	0.99	10.25	3.75	11.48	4.74	273.43
YDR453C	TSA2	1.00	1.41	1.63	2.07	2.25	2.35	1.98	0.83	15.46	3.93	17.44	4.76	290.62
YNL183C	NPR1	0.95	1.40	1.54	1.99	2.15	2.27	3.32	2.93	21.60	1.83	24.92	4.76	318.23
YKR027W	BCH2	0.89	1.02	1.17	1.67	1.93	2.12	0.74	2.01	4.00	2.83	4.74	4.84	254.12
YGR184C	UBR1	1.01	1.36	1.56	1.98	2.15	2.28	0.58	0.13	15.45	4.73	16.04	4.86	273.47
YOR016C	ERP4	0.97	1.30	1.54	2.02	2.19	2.37	0.15	-0.03	11.50	4.91	11.65	4.88	277.72
YOR044W	IRC23	0.98	1.37	1.60	2.02	2.19	2.32	0.12	2.13	8.68	2.75	8.81	4.89	284.47
YHR028C	DAP2	0.92	1.11	1.30	1.69	1.93	2.09	1.47	0.80	21.31	4.09	22.78	4.89	289.55
YOR364W	YOR364w	0.93	1.18	1.38	1.79	1.97	2.08	1.01	0.76	17.01	4.17	18.02	4.93	281.93
YHR202W	YHR202w	0.94	1.20	1.38	1.83	2.05	2.16	1.30	0.64	18.48	4.30	19.78	4.94	294.23
YLR187W	SKG3	1.00	1.21	1.37	1.85	2.08	2.23	1.23	0.81	20.17	4.13	21.40	4.94	284.46
YDL179W	PCL9	0.99	1.35	1.49	1.90	2.14	2.31	0.59	0.72	3.00	4.23	3.59	4.94	280.86
YJR088C	EMC2	0.97	1.35	1.51	1.93	2.13	2.25	2.94	2.92	4.18	2.03	7.12	4.96	276.22
YGR289C	MAL11	0.97	1.21	1.38	1.72	1.94	2.13	0.75	0.85	7.23	4.11	7.98	4.97	259.91
YDL138W	RGT2	1.01	1.40	1.55	1.92	2.14	2.30	1.35	0.95	18.46	4.06	19.81	5.01	311.71
YOR134W	BAG7	0.99	1.32	1.50	1.94	2.14	2.24	1.18	0.96	17.89	4.06	19.07	5.02	297.40
YOR349W	CIN1	1.01	1.41	1.65	2.03	2.16	2.29	1.56	0.27	29.83	4.78	31.38	5.04	286.13
YKL147C	YKL147c	0.97	1.27	1.43	1.87	2.08	2.20	1.12	1.00	13.26	4.06	14.39	5.06	273.43
YNL249C	MPA43	0.98	1.36	1.61	1.99	2.16	2.27	0.25	0.32	12.55	4.74	12.80	5.06	274.98
YLR387C	REH1	0.93	1.14	1.31	1.71	1.90	2.13	1.09	0.88	12.13	4.18	13.22	5.07	281.09
YML035C	AMD1	0.92	1.07	1.21	1.62	1.83	2.03	1.19	0.59	21.40	4.48	22.58	5.07	298.14
YGR077C	PEX8	0.96	1.27	1.47	2.01	2.20	2.28	1.37	1.09	21.19	3.98	22.56	5.08	292.21
YOR184W	SER1	0.85	1.14	1.23	1.59	1.85	2.05	1.52	1.37	14.86	3.71	16.38	5.08	277.20
YGR044C	RME1	0.94	1.28	1.45	1.87	2.05	2.14	2.02	0.81	29.02	4.29	31.04	5.10	313.47
YPL092W	SSU1	0.91	1.18	1.33	1.80	2.04	2.21	2.30	0.01	26.60	5.09	28.90	5.11	308.24
YGR052W	FMP48	0.99	1.33	1.53	1.99	2.19	2.28	1.11	1.10	8.01	4.01	9.11	5.11	269.95
YOR386W	PHR1	0.99	1.34	1.58	1.99	2.12	2.27	0.08	0.05	4.41	5.06	4.49	5.11	271.53
YMR156C	TPP1	0.97	1.16	1.40	1.89	2.10	2.30	0.57	0.24	18.22	4.90	18.79	5.14	286.83
YLR326W	YLR326w	1.02	1.39	1.59	2.02	2.15	2.29	1.18	1.01	15.17	4.13	16.35	5.14	280.07
YLR442C	SIR3	0.88	1.09	1.33	1.77	1.99	2.16	0.75	0.83	4.61	4.31	5.36	5.14	272.63
YDR067C	OCA6	0.89	1.23	1.43	1.81	2.00	2.12	1.28	1.34	10.43	3.81	11.71	5.15	245.08

ORF.name	Strain	Optical density at 600 nm at regular intervals (hours)						GLUCOSE		FRUCTOSE		TOTAL SUGARS (g/l)		TOTAL AMINO ACIDS (mg/L)
		0	26	33	48	59	78	102 h	118 h	102 h	118 h	102 h	118 h	102 h
YMR153W	*NUP53*	0.99	1.16	1.35	1.81	2.03	2.24	0.41	0.20	20.79	4.96	21.20	5.16	291.61
YGR033C	*TIM21*	1.00	1.41	1.63	2.08	2.24	2.31	0.80	0.92	12.65	4.24	13.44	5.16	277.63
YJR110W	*YMR1*	1.14	1.64	1.81	2.19	2.31	2.42	3.08	3.02	6.37	2.14	9.45	5.17	271.01
YBR209W	*YBR209w*	0.89	1.13	1.25	1.57	1.82	2.00	1.54	1.32	15.03	3.85	16.58	5.17	291.26
YIL132C	*CSM2*	1.03	1.17	1.34	1.87	2.14	2.36	2.07	0.70	4.13	4.49	6.20	5.19	231.90
YGR285C	*ZUO1*	0.98	1.32	1.41	1.54	1.70	1.87	2.86	3.02	6.65	2.17	9.51	5.19	303.12
YOL101C	*IZH4*	0.92	1.46	1.64	2.04	2.20	2.31	3.35	2.97	14.65	2.23	18.00	5.20	299.00
YHR106W	*TRR2*	0.99	1.31	1.50	2.00	2.18	2.30	1.14	1.20	3.42	4.03	4.56	5.23	283.76
YPL184C	*MRN1*	0.97	1.23	1.40	1.82	2.02	2.20	1.63	0.19	24.24	5.06	25.87	5.26	310.85
YNL255C	*GIS2*	0.95	1.25	1.47	1.88	2.07	2.23	0.41	0.10	14.78	5.16	15.19	5.26	264.85
YHR012W	*VPS29*	0.94	1.25	1.39	1.74	1.88	2.04	0.83	-0.13	26.24	5.44	27.07	5.31	332.43
YOR301W	*RAX1*	1.02	1.32	1.50	1.92	2.10	2.27	0.84	0.13	25.29	5.20	26.14	5.33	293.51
YDR234W	*LYS4*	0.93	1.17	1.31	1.65	1.85	2.00	1.54	1.24	22.90	4.11	24.44	5.35	296.34
YHR199C	*AIM46*	0.94	1.20	1.36	1.81	2.03	2.15	1.57	1.07	20.17	4.29	21.75	5.35	326.06
YKR036C	*CAF4*	0.93	1.16	1.39	1.95	2.15	2.30	1.17	0.70	21.45	4.66	22.63	5.36	296.04
YLR176C	*RFX1*	1.04	1.33	1.57	2.08	2.24	2.36	1.25	0.93	18.25	4.46	19.50	5.39	286.05
YLR389C	*STE23*	0.90	1.11	1.27	1.61	1.89	2.09	0.86	0.40	14.27	5.00	15.14	5.40	289.97
YDR225W	*HTA1*	0.98	1.26	1.41	1.89	2.09	2.27	1.48	0.88	21.84	4.53	23.31	5.41	280.60
YGL125W		0.90	1.11	1.18	1.56	1.92	2.11	0.93	0.70	17.18	4.71	18.11	5.41	294.26
YLL007C	*YLL007c*	1.00	1.48	1.64	2.00	2.18	2.31	3.17	3.14	13.21	2.27	16.37	5.41	297.33
YGR012W	*YGR012w*	1.01	1.24	1.36	1.82	2.04	2.25	1.27	0.97	13.62	4.50	14.89	5.47	280.07
YKL115C	*YKL115c*	0.90	1.13	1.37	1.92	2.12	2.29	1.15	1.26	13.89	4.21	15.04	5.47	274.04
YJR154W	*YJR154w*	0.96	1.43	1.59	1.97	2.15	2.26	2.93	2.99	9.95	2.50	12.89	5.48	280.77
YJL160C	*YJL160c*	0.89	1.03	1.20	1.63	1.85	2.06	1.40	0.78	21.00	4.71	22.40	5.49	270.43
YOR061W	*CKA2*	1.01	1.41	1.58	1.88	2.08	2.25	0.02	2.50	3.97	3.00	3.99	5.49	297.53
YGR071C	*YGR071c*	0.98	1.32	1.53	2.01	2.19	2.28	2.32	0.56	30.64	4.95	32.97	5.51	288.18
YOL058W	*ARG1*	0.89	1.16	1.32	1.75	1.95	2.08	1.27	1.30	7.79	4.21	9.06	5.51	226.68
YJR111C	*YJR111c*	0.96	1.50	1.67	2.05	2.21	2.31	3.27	3.06	14.77	2.47	18.04	5.53	278.15
YJL170C	*ASG7*	0.97	1.15	1.28	1.72	1.91	2.14	1.28	1.18	13.82	4.36	15.10	5.54	282.98
YGR031W	*YGR031w*	0.98	1.36	1.59	2.06	2.21	2.29	0.96	0.87	17.31	4.67	18.27	5.54	273.10
YFR049W	*YMR31*	0.92	1.14	1.26	1.79	2.00	2.21	3.34	3.08	12.44	2.46	15.78	5.54	287.00
YHR064C	*SSZ1*	0.86	1.18	1.28	1.70	1.94	2.09	3.36	3.03	16.64	2.52	19.99	5.55	290.38
YDR352W	*YDR352w*	1.00	1.24	1.43	1.89	1.90	2.04	0.11	0.05	11.53	5.54	11.64	5.58	270.20
YOL049W	*GSH2*	0.88	1.19	1.35	1.71	1.94	2.04	1.47	1.14	11.61	4.45	13.08	5.59	264.49
YBR111C	*YSA1*	0.97	1.26	1.52	1.97	2.16	2.28	1.35	0.68	22.23	4.92	23.58	5.60	284.09
YGL070C	*RPB9*	0.96	1.16	1.32	1.71	2.00	2.20	1.14	0.70	12.24	4.92	13.38	5.62	286.86
YHR009C	*YHR009c*	0.96	1.54	1.72	2.08	2.21	2.29	3.73	3.00	18.45	2.62	22.19	5.63	284.69
YPL236C	*YPL236c*	0.94	1.20	1.39	1.86	2.02	2.19	1.08	-0.07	27.79	5.70	28.86	5.63	282.88
YJR052W	*RAD7*	0.95	1.30	1.46	1.84	2.08	2.26	0.42	0.61	5.75	5.03	6.17	5.64	272.26
YDR458C	*HEH2*	0.97	1.35	1.60	1.97	2.22	2.30	1.69	0.77	24.53	4.88	26.22	5.65	298.68
YOR047C	*STD1*	1.00	1.38	1.61	1.99	2.17	2.31	0.33	1.62	12.47	4.06	12.81	5.68	274.39
YKR019C	*IRS4*	0.87	0.97	1.09	1.45	1.63	1.81	1.02	0.72	17.98	4.97	19.00	5.70	310.98
YDR206W	*ADK1*	0.97	1.20	1.33	1.76	1.96	2.17	0.99	1.27	3.74	4.44	4.73	5.71	261.42
YMR206W	*YMR206w*	1.01	1.24	1.41	1.80	2.03	2.25	0.40	0.38	13.54	5.34	13.94	5.71	271.78
YJR107W	*YJR107w*	0.87	1.11	1.15	1.45	1.71	1.92	2.35	1.21	25.18	4.52	27.53	5.74	283.14
YHR013C	*ARD1*	1.01	1.29	1.49	2.01	2.18	2.27	1.81	-0.01	19.65	5.75	20.45	5.74	243.62
YPR120C	*CLB5*	0.87	1.06	1.14	1.60	1.84	2.05	3.03	3.19	5.97	2.57	9.00	5.76	279.68
YBR220C	*YBR220c*	0.91	1.15	1.31	1.82	2.04	2.22	0.59	0.11	20.43	5.66	21.02	5.77	293.33
YER090W	*TRP2*	0.92	1.34	1.48	1.82	2.01	2.14	1.62	1.32	22.67	4.45	24.29	5.78	284.52
YMR253C	*YMR253c*	1.05	1.44	1.70	2.08	2.26	2.36	2.04	0.18	28.43	5.61	30.47	5.79	300.67
YJR055W	*HIT1*	0.94	1.03	1.11	1.57	1.86	2.13	0.87	0.81	16.23	4.99	17.10	5.80	265.23
YBR084W	*MIS1*	0.93	1.20	1.43	1.88	2.05	2.19	1.15	0.66	20.97	5.17	22.12	5.83	281.70
YKL001C	*MET14*	1.00	1.33	1.54	2.04	2.24	2.37	1.08	0.97	10.05	4.87	11.12	5.85	239.66
YFL034W	*YFL034w*	0.92	1.25	1.35	1.69	1.90	2.08	3.00	2.96	4.63	2.90	7.63	5.86	283.14
YOR005C	*DNL4*	0.92	1.14	1.29	1.75	1.97	2.20	0.80	0.01	20.11	5.87	20.90	5.88	304.11
YMR037C	*MSN2*	0.90	1.06	1.24	1.74	1.99	2.17	1.41	0.75	22.37	5.14	23.78	5.89	280.36
YMR090W	*YMR090w*	0.99	1.43	1.61	2.02	2.21	2.33	3.00	2.99	10.39	2.91	13.39	5.90	286.21
YMR244C-A	*YMR244c-a*	0.95	1.08	1.22	1.62	1.85	2.10	0.19	0.03	17.35	5.87	17.55	5.90	286.16
YDR221W	*GTB1*	1.03	1.40	1.65	2.12	2.26	2.38	1.52	0.93	22.49	4.97	24.00	5.90	281.59
YOR079C	*ATX2*	1.03	1.49	1.70	2.11	2.28	2.38	1.26	2.09	5.67	3.82	6.94	5.91	269.36
YLL021W	*SPA2*	0.95	1.32	1.58	1.90	2.03	2.21	1.54	1.22	6.94	4.73	8.48	5.94	187.80
YBR224W	*YBR224w*	0.88	1.14	1.34	1.87	2.08	2.22	0.39	0.05	18.66	5.92	19.05	5.97	288.17
YJL144W	*YJL144w*	1.02	1.39	1.60	2.52	2.50	2.32	1.23	1.11	11.30	4.86	12.52	5.97	284.53
YEL038W	*UTR4*	0.91	1.20	1.35	1.78	1.95	2.06	2.62	0.24	24.91	5.78	27.53	6.02	286.23
YLR219W	*MSC3*	0.98	1.22	1.38	1.89	2.07	2.21	1.88	0.92	29.51	5.10	31.39	6.02	291.21
YJL159W	*HSP150*	1.01	1.36	1.56	2.00	2.13	2.28	1.31	0.95	16.84	5.08	18.15	6.03	284.13
YCR091W	*KIN82*	0.96	1.26	1.39	1.80	1.99	2.20	3.19	3.07	6.19	2.99	9.38	6.06	281.49
YGR037C	*ACB1*	1.02	1.30	1.56	2.10	2.29	2.37	0.38	0.66	9.07	5.43	9.45	6.10	264.46
YHL027W	*RIM101*	0.89	1.18	1.34	1.77	1.95	2.09	2.22	0.16	27.76	5.98	29.98	6.13	288.98
YKL068W	*NUP100*	0.99	1.31	1.53	2.05	2.23	2.35	0.83	0.98	7.66	5.16	8.49	6.14	246.73
YPL051W	*ARL3*	0.86	1.09	1.17	1.54	1.74	1.93	3.03	3.47	5.17	2.67	8.20	6.14	254.53
YJL213W	*YJL213w*	0.84	0.94	1.07	1.50	1.75	2.21	1.03	0.90	13.81	5.24	14.83	6.15	297.00
YMR230W	*RPS10b*	0.95	1.07	1.19	1.64	1.90	2.15	0.76	0.05	24.87	6.10	25.63	6.15	282.16
YDR534C	*FIT1*	0.95	1.37	1.60	2.02	2.20	2.28	1.26	0.66	18.64	5.50	19.90	6.16	231.45
YPL033C	*SRL4*	0.86	1.11	1.24	1.66	1.86	2.05	3.09	3.20	6.41	2.98	9.50	6.18	250.96
YLR185W	*RPL37a*	1.04	1.22	1.34	1.91	2.14	2.31	1.54	1.08	22.23	5.12	23.77	6.20	260.16
YOR350C	*MNE1*	1.01	1.29	1.51	1.99	2.14	2.28	0.38	0.06	16.81	6.14	17.19	6.20	256.84
YPL198W	*RPL7b*	0.94	1.22	1.39	1.86	2.02	2.20	1.84	0.15	27.21	6.07	29.05	6.21	296.07
YAR044W	*OSH1*	0.88	1.08	1.26	1.58	1.74	1.97	2.48	1.46	22.14	4.79	24.63	6.25	230.41
YIL032C	*YIL032c*	0.99	1.64	1.81	2.14	2.27	2.36	2.90	2.94	5.01	3.32	7.91	6.26	270.01
YPR002W	*PDH1*	0.84	1.08	1.20	1.63	1.81	1.99	3.11	3.28	5.61	3.02	8.72	6.29	264.22
YMR152W	*VIM1*	0.95	1.09	1.22	1.63	1.88	2.13	0.34	0.24	14.98	6.07	15.32	6.30	299.37
YDR395W	*SXM1*	1.00	1.43	1.69	2.18	2.31	2.40	0.81	0.29	16.27	6.02	17.09	6.31	269.49
YDR209C	*YDR209c*	0.97	1.22	1.40	1.88	2.05	2.22	1.48	1.10	17.77	5.22	19.26	6.32	247.81
YJL133W	*MRS3*	0.98	1.34	1.54	1.98	2.14	2.30	1.48	1.08	19.12	5.26	20.60	6.34	279.97
YIL101C	*XBP1*	0.84	1.16	1.30	1.62	1.82	1.99	0.92	0.67	17.46	5.72	18.38	6.39	361.04
YJL141C	*YAK1*	0.92	1.13	1.35	1.85	2.05	2.23	2.89	0.76	20.87	5.65	23.76	6.41	281.77
YKR101W	*SIR1*	0.96	1.43	1.57	2.05	2.24	2.38	3.30	2.99	13.30	3.42	16.60	6.41	250.72
YOL131W	*YOL131w*	0.96	1.51	1.66	2.04	2.20	2.32	3.12	3.20	9.40	3.23	12.52	6.43	263.98
YJR032W	*CPR7*	0.93	1.09	1.20	1.54	1.82	2.06	1.94	0.91	27.04	5.54	28.98	6.45	250.16
YBR239C	*ERT1*	0.90	1.11	1.28	1.83	2.05	2.18	0.66	0.16	21.19	6.34	21.84	6.51	293.88
YLR271W	*YLR271w*	1.10	1.47	1.70	2.14	2.27	2.40	1.54	0.86	24.61	5.65	26.15	6.51	289.64
YOR120W	*GCY1*	1.05	1.47	1.71	2.10	2.27	2.33	1.61	1.05	24.87	5.52	26.48	6.57	290.20
YLR267W	*BOP2*	1.01	1.20	1.34	1.83	2.05	2.28	0.88	0.95	8.65	5.64	9.53	6.58	289.44
YFR045W	*YFR045w*	1.00	1.31	1.49	1.92	2.09	2.26	3.34	2.92	16.63	3.70	19.97	6.62	296.40
YKL174C	*TPO5*	0.98	1.29	1.48	2.02	2.20	2.30	1.01	1.14	8.97	5.52	9.98	6.66	286.63
YOR302W	*YOR302w*	0.87	1.07	1.27	1.72	1.96	2.13	0.99	0.70	18.23	5.99	19.22	6.69	276.68
YOR105W	*YOR105w*	1.00	1.36	1.58	2.01	2.19	2.25	1.98	1.02	26.31	5.68	28.29	6.70	292.02
YLR416C	*YLR416c*	0.93	1.18	1.36	1.84	2.02	2.22	1.21	1.01	11.98	5.69	13.20	6.71	276.93
YLR227C	*ADY4*	0.99	1.31	1.51	2.01	2.19	2.32	1.11	1.03	10.00	5.69	11.11	6.72	286.33
YEL039C	*CYC7*	0.92	1.24	1.42	1.90	2.06	2.16	0.66	0.11	22.71	6.63	23.37	6.74	278.55
YKL117W	*SBA1*	0.98	1.36	1.58	2.12	2.26	2.33	1.25	1.11	15.16	5.64	16.41	6.75	270.15
YNL081C	*SWS2*	0.97	1.41	1.64	2.02	2.18	2.30	1.43	1.23	12.20	5.53	13.62	6.75	262.67
YDR522C	*SPS2*	0.96	1.38	1.61	2.06	2.23	2.33	0.94	0.79	8.06	5.96	9.00	6.76	236.81
YJL190C	*RPS22a*	0.96	1.22	1.42	1.90	2.05	2.24	1.29	1.08	19.41	5.69	20.70	6.77	292.16
YHR082C	*KSP1*	0.98	1.26	1.39	1.80	2.02	2.12	2.33	1.00	27.76	5.82	30.09	6.82	201.58
YGR182C	*YGR182c*	0.99	1.27	1.44	1.99	2.20	2.31	2.09	0.74	28.87	6.10	30.96	6.83	277.32
YGR207C	*YGR207c*	1.04	1.42	1.61	2.07	2.22	2.35	0.43	0.10	19.60	6.80	20.03	6.90	289.25
YER086W	*ILV1*	0.86	1.12	1.22	1.53	1.80	2.01	1.33	1.38	11.75	5.54	13.08	6.92	287.10
YGR192C	*TDH3*	0.94	1.24	1.45	1.94	2.10	2.25	1.14	0.09	25.99	6.86	27.13	6.95	296.91
YNL253W	*TEX1*	0.97	1.30	1.53	1.93	2.13	2.25	0.49	0.13	15.57	6.83	16.07	6.96	271.32
YPL196W	*OXR1*	0.96	1.25	1.44	1.97	2.12	2.28	1.74	0.27	31.47	6.69	33.21	6.96	290.42
YNL111C	*CYB5*	0.91	1.07	1.24	1.62	1.86	2.04	0.79	0.79	2.98	6.19	3.77	6.97	263.28
YPL064C	*CWC27*	0.85	1.12	1.29	1.74	1.90	2.07	3.14	2.82	15.78	4.18	18.92	7.00	266.75
YMR157C	*AIM36*	0.94	1.13	1.35	1.77	1.96	2.17	0.95	0.25	25.22	6.75	26.17	7.00	304.61
YNL205C	*YNL205c*	0.98	1.60	1.79	2.14	2.25	2.35	2.99	3.02	13.35	3.99	16.33	7.00	283.30
YNL138W	*SRV2*	0.89	1.05	1.23	1.76	1.96	2.14	1.13	0.82	17.19	6.19	18.32	7.01	268.53
YPL155C	*KIP2*	0.97	1.24	1.42	1.97	2.15	2.34	1.23	0.16	27.62	6.84	28.85	7.01	291.69
YLR077W	*FMP25*	1.04	1.34	1.57	1.94	2.08	2.27	2.54	1.16	16.32	5.87	18.86	7.04	185.56
YPL014W	*YPL014w*	0.94	1.26	1.36	1.70	1.88	2.11	3.21	3.33	6.98	3.72	10.18	7.05	254.96
YGR084C	*MRP13*	1.03	1.41	1.61	2.02	2.20	2.28	1.15	1.17	12.42	5.89	13.57	7.06	265.67
YGL087C	*MMS2*	0.93	1.49	1.61	1.97	2.11	2.25	3.74	3.15	21.89	3.92	25.63	7.07	286.35
YDR486C	*VPS60*	0.94	1.26	1.42	1.82	2.17	2.15	1.68	0.86	25.91	6.22	27.59	7.08	253.42
YOL110W	*SHR5*	0.96	1.41	1.56	1.98	2.17	2.30	3.69	3.01	18.91	4.07	22.60	7.08	298.43
YBR274W	*CHK1*	0.95	1.37	1.52	1.90	2.09	2.21	2.81	0.90	30.70	6.20	33.52	7.10	268.65
YJL012C	*VTC4*	0.94	1.16	1.39	1.78	2.01	2.16	1.36	0.90	15.89	6.23	17.24	7.13	258.49
YGR026W	*YGR026w*	1.03	1.41	1.65	2.10	2.26	2.41	0.99	0.88	11.14	6.25	12.13	7.13	282.83
YER048C	*CAJ1*	0.93	1.22	1.43	1.97	2.16	2.28	1.74	0.08	21.76	7.06	23.51	7.14	284.64
YHR025W	*THR1*	0.91	1.29	1.43	1.79	2.00	2.13	1.47	1.28	19.70	5.87	21.17	7.15	280.31
YPL256C	*CLN2*	0.98	1.22	1.39	1.89	2.10	2.29	1.11	0.22	28.14	6.95	29.24	7.17	303.95
YBR084C-A	*RPL19a*	0.93	1.10	1.26	1.76	2.03	2.27	1.42	0.63	25.51	6.54	26.93	7.17	211.82
YJL177W	*RPL17b*	0.87	0.95	1.07	1.55	1.78	1.99	1.23	0.80	21.58	6.38	22.81	7.19	292.85
YHR154W	*RTT107*	0.97	1.19	1.31	2.07	2.05	1.99	1.00	1.15	7.93	6.05	8.94	7.20	310.60
YMR187C	*YMR187c*	0.99	1.22	1.43	1.85	2.04	2.24	0.40	0.55	9.29	6.66	9.69	7.21	281.06
YGL088W	*YGL088w*	0.88	1.00	1.10	1.42	1.75	2.00	1.14	0.74	15.85	6.50	16.99	7.24	244.05

ORF.name	Strain	Optical density at 600 nm at regular intervals (hours)						GLUCOSE		FRUCTOSE		TOTAL SUGARS (g/l)		TOTAL AMINO ACIDS (mg/L)
		0	26	33	48	59	78	102 h	118 h	102 h	118 h	102 h	118 h	102 h
YGL135W	RPL1b	0.97	1.32	1.61	2.04	2.21	2.33	0.83	0.61	8.18	6.67	9.01	7.27	227.45
YCR069W	CPR4	0.90	1.08	1.28	1.77	1.98	2.15	0.77	1.03	11.05	6.27	11.82	7.30	287.72
YIL027C	KRE27	0.99	1.44	1.38	1.87	2.08	2.25	3.12	2.92	15.89	4.39	19.01	7.31	313.76
YKL065C	YET1	0.99	1.30	1.51	1.99	2.18	2.29	0.85	1.12	12.63	6.20	13.48	7.31	273.30
YHL047C	ARN2	1.06	1.39	1.62	2.16	2.33	2.43	0.94	0.71	27.24	6.63	28.18	7.34	290.59
YLR030W	YLR030w	0.88	1.31	1.51	1.93	2.12	2.23	3.44	3.05	17.04	4.29	20.49	7.34	295.21
YLR135W	SLX4	0.95	1.20	1.33	1.76	1.97	2.06	1.87	0.98	27.77	6.37	29.64	7.35	284.08
YNL094W	APP1	0.89	1.23	1.44	1.84	2.02	2.21	0.82	0.70	11.22	6.65	12.04	7.35	292.59
YPL006W	NCR1	0.93	1.33	1.46	1.79	1.95	2.12	3.21	3.47	4.18	3.91	7.38	7.39	253.80
YGR237C	YGR237c	0.99	1.38	1.55	1.98	2.12	2.25	3.46	3.07	19.69	4.31	23.16	7.39	300.24
YIL035C	CKA1	0.94	1.52	1.65	2.00	2.13	2.23	2.88	2.98	7.05	4.43	9.93	7.41	270.04
YPL111W	CAR1	0.95	1.19	1.36	1.82	2.03	2.24	2.46	-0.04	3.48	7.48	5.94	7.44	225.10
YDR371W	CTS2	1.02	1.33	1.55	1.99	2.15	2.32	0.46	-0.06	22.78	7.54	23.24	7.48	312.96
YDL013W	SLX5	0.85	0.98	1.09	1.41	1.65	1.84	0.77	0.85	6.54	6.64	7.31	7.48	263.85
YOR384W	FRE5	0.97	1.29	1.50	1.90	2.06	2.20	0.61	0.00	20.59	7.50	21.20	7.50	272.95
YDL114W	YDL114w	0.93	1.28	1.40	1.74	1.98	2.19	0.79	0.84	8.37	6.68	9.17	7.52	287.14
YHL003C	LAG1	0.91	1.20	1.34	1.69	1.90	2.07	1.54	1.37	17.56	6.16	19.09	7.53	294.74
YDL174C	DLD1	0.96	1.35	1.52	1.89	2.12	2.30	1.05	0.67	22.02	6.86	23.06	7.54	302.46
YKL148C	SDH1	0.99	1.29	1.50	1.97	2.14	2.24	1.54	0.97	21.74	6.57	23.27	7.54	271.94
YJR062C	NTA1	0.90	1.24	1.36	1.70	1.92	2.12	2.03	0.88	28.83	6.67	30.86	7.54	272.24
YOR367W	SCP1	1.04	1.36	1.60	1.99	2.20	2.16	0.46	0.32	17.52	7.22	17.98	7.55	279.11
YOR064C	YNG1	0.99	1.42	1.65	1.98	2.15	2.27	0.26	-0.01	15.73	7.66	15.98	7.65	278.04
YKL124W	SSH4	0.85	1.03	1.14	1.66	1.88	2.02	1.20	1.11	12.27	6.56	13.47	7.67	271.26
YKL123W	YKL123w	1.01	1.40	1.62	2.07	2.22	2.31	1.49	1.28	21.37	6.41	22.85	7.69	289.22
YLR151C	PCD1	0.86	0.99	1.08	1.71	1.96	2.12	1.39	0.85	25.47	6.86	26.86	7.70	284.56
YEL049W	PAU2	0.92	1.27	1.48	1.96	2.11	2.22	2.02	0.12	29.31	7.60	31.33	7.73	289.45
YJR152W	DAL5	1.09	1.60	1.75	2.14	2.28	2.41	3.42	3.08	15.94	4.69	19.37	7.77	253.03
YNL274C	GOR1	0.93	1.38	1.55	1.96	2.13	2.24	4.95	3.17	28.80	4.60	33.74	7.78	289.45
YCR022C	YCR022c	0.92	1.26	1.42	1.88	2.03	2.12	1.20	1.14	7.62	6.64	8.82	7.78	275.82
YIL023C	YKE4	0.89	1.41	1.56	1.93	2.07	2.16	3.15	3.07	7.75	4.73	10.90	7.80	256.59
YNL270C	ALP1	1.00	1.41	1.66	2.03	2.19	2.29	0.58	0.07	18.40	7.74	18.99	7.81	274.71
YMR191W	SPG5	1.00	1.15	1.29	1.74	1.99	2.26	0.72	0.60	14.75	7.22	15.48	7.82	264.70
YIL043C	CBR1	0.95	1.58	1.71	2.11	2.20	2.19	3.32	3.07	17.99	4.77	21.30	7.84	284.13
YMR174C	PAI3	0.88	0.94	1.05	1.45	1.70	1.69	0.33	0.17	18.16	7.70	18.49	7.87	293.36
YMR303C	ADH2	1.07	1.43	1.68	2.11	2.27	2.43	3.46	0.88	25.98	7.01	29.44	7.89	289.47
YBR186W	PCH2	1.01	1.21	1.40	1.90	2.12	2.30	0.97	0.63	24.68	7.28	25.66	7.91	283.49
YLR436C	ECM30	0.95	1.31	1.50	1.90	2.10	2.24	3.89	3.09	19.78	4.83	23.67	7.92	301.40
YOR197W	MCA1	0.90	0.98	1.00	1.20	1.36	1.47	1.18	2.06	16.93	5.88	18.11	7.94	295.19
YDR475C	JIP4	0.89	1.21	1.37	1.74	1.93	2.11	2.06	0.87	29.76	7.08	31.82	7.95	284.79
YNL129W	NRK1	0.91	1.31	1.51	1.89	2.07	2.23	1.52	0.87	20.17	7.08	21.68	7.95	266.33
YPR026W	ATH1	0.99	1.22	1.46	1.88	2.08	2.23	2.14	0.79	30.55	7.17	32.69	7.97	282.64
YBR085C-A	YBR085c-a	0.94	1.24	1.40	1.75	1.96	2.07	2.07	0.85	24.42	7.17	26.49	8.02	314.59
YHL007C	STE20	0.92	1.22	1.39	1.89	2.07	2.16	1.20	-0.04	29.58	8.08	30.79	8.03	290.57
YMR163C	INP2	0.95	1.12	1.30	1.73	1.94	2.16	1.06	0.16	25.17	7.88	26.23	8.04	296.76
YGL100W	SEH1	0.81	1.01	1.13	1.64	1.93	2.10	0.15	0.85	1.29	7.22	1.44	8.07	253.01
YDR480W	DIG2	0.96	1.46	1.68	2.02	2.12	2.25	2.95	0.80	29.41	7.29	32.36	8.09	276.85
YLR338W	YLR338w	0.92	1.14	1.29	1.58	1.80	1.95	1.84	0.71	25.71	7.39	27.55	8.10	258.82
YML022W	APT1	0.95	1.16	1.23	1.42	1.61	1.76	2.48	1.28	26.94	6.82	29.42	8.10	326.86
YGR108W	CLB1	0.97	1.28	1.50	1.95	2.15	2.21	1.28	0.85	16.84	7.27	18.12	8.12	275.34
YJR055W	HIT1	0.95	1.27	1.33	1.67	1.96	2.21	1.10	0.95	21.00	7.19	22.10	8.14	305.62
YCR102W-A	YCR102w-a	0.87	1.00	1.16	1.55	1.76	1.98	1.97	0.59	29.06	7.56	31.02	8.14	285.43
YEL033W	MTC7	0.91	1.21	1.39	1.81	1.99	2.08	1.71	0.16	29.84	8.05	31.55	8.20	265.52
YLR097C	HRT3	0.93	1.22	1.38	1.75	1.91	2.15	2.44	1.19	22.86	7.04	25.31	8.23	292.77
YGR050C	YGR050c	0.90	1.06	1.26	1.70	1.92	2.12	1.08	0.83	14.44	7.41	15.52	8.25	270.41
YPR042C	PUF2	0.88	1.31	1.49	1.85	2.02	2.17	3.05	2.88	18.67	5.39	21.72	8.26	304.58
YOR006C	TSR3	1.01	1.23	1.28	1.73	2.01	2.24	1.84	0.04	22.71	8.23	24.55	8.27	286.26
YMR142C	RPL13b	0.92	1.24	1.31	1.72	2.07	2.29	3.86	2.83	19.49	5.45	23.35	8.28	284.64
YPL189W	GUP2	1.00	1.38	1.62	2.07	2.23	2.19	0.97	0.17	20.84	8.12	21.81	8.29	284.54
YHR153C	SPO16	0.91	1.17	1.34	1.90	2.09	2.20	0.93	1.21	4.97	7.12	5.90	8.33	314.35
YOR158W	PET123	0.92	1.10	1.22	1.62	1.94	2.09	1.57	0.72	21.66	7.63	23.23	8.34	242.35
YKL072W	STB6	0.89	1.12	1.29	1.93	2.13	2.23	0.25	0.99	13.21	7.36	13.45	8.35	273.68
YPL181W	CTI6	1.04	1.33	1.46	1.98	2.16	2.36	0.24	0.17	17.41	8.18	17.66	8.35	296.34
YPL191C	YPL191c	1.01	1.42	1.67	2.09	2.22	2.37	0.97	0.15	23.44	8.29	24.40	8.43	286.19
YPR122W	AXL1	0.90	1.15	1.26	1.59	1.74	1.95	3.31	3.82	15.52	4.64	18.83	8.47	277.34
YOR010C	TIR2	1.00	1.40	1.67	2.01	2.16	2.28	0.44	0.12	16.99	8.35	17.43	8.47	279.69
YLL062C	MHT1	0.94	1.19	1.36	1.74	1.90	2.13	0.96	1.01	3.27	7.47	4.23	8.47	133.07
YIL057C	YIL057c	1.03	1.60	1.74	2.09	2.20	2.29	2.58	2.93	8.20	5.59	10.78	8.52	264.39
YOR115C	TRS33	1.08	1.51	1.72	2.15	2.29	2.36	2.51	0.90	30.85	7.63	33.36	8.53	300.33
YMR194W	RPL36a	0.97	1.13	1.31	1.81	2.02	2.24	1.60	0.15	30.95	8.41	32.56	8.56	284.17
YLR405W	DUS4	1.00	1.27	1.48	1.90	2.07	2.22	2.04	0.96	26.74	7.60	28.78	8.56	289.25
YOR365C	YOR365c	1.04	1.37	1.60	2.00	2.13	2.26	0.40	0.19	14.62	8.38	15.02	8.57	272.02
YHR179W	OYE2	0.91	1.19	1.36	1.90	2.08	2.19	1.74	0.81	23.62	7.78	25.36	8.58	293.68
YCL032W	STE50	0.93	1.24	1.42	1.90	2.11	2.22	1.38	1.23	4.69	7.36	6.07	8.59	271.74
YJL171C	YJL171c	1.04	1.42	1.64	2.10	2.24	2.41	1.22	1.25	13.39	7.35	14.61	8.59	282.04
YLL020C	YLL020c	0.96	1.22	1.46	1.81	1.98	2.20	2.74	1.40	24.78	7.19	27.52	8.59	258.04
YDR133C	YDR133c	0.95	1.26	1.43	1.86	2.05	2.19	0.77	0.14	18.75	8.46	19.52	8.60	290.81
YHR171W	LSM12	0.95	1.25	1.41	1.90	2.06	2.19	0.99	1.18	3.57	7.43	4.74	8.62	306.14
YDL154W	MSH5	0.92	1.23	1.31	1.69	1.97	2.21	1.04	0.88	18.23	7.74	19.27	8.62	303.62
YHR066W	SSF1	0.92	1.18	1.28	1.77	1.98	2.13	1.38	1.06	13.49	7.57	14.87	8.63	256.55
YPR004C	AIM45	0.90	1.13	1.23	1.58	1.74	1.94	3.38	3.17	18.01	5.49	21.39	8.66	267.53
YPR111W	DBF20	1.10	1.61	1.78	2.11	2.27	2.42	3.27	3.38	7.01	5.29	10.28	8.66	259.00
YPL015C	HST2	0.85	1.08	1.19	1.57	1.72	1.89	3.23	3.30	13.80	5.37	17.03	8.67	275.38
YNL238W	KEX2	0.94	1.29	1.42	1.83	2.02	2.14	3.70	3.45	22.83	5.22	26.53	8.68	304.98
YGL082W	YGL082w	0.99	1.52	1.68	2.06	2.22	2.35	3.20	3.06	17.21	5.64	20.40	8.70	309.95
YMR041C	ARA2	1.00	1.25	1.49	1.97	2.15	2.35	0.36	0.16	17.48	8.55	17.83	8.71	291.78
YHR137W	ARO9	0.92	1.21	1.41	1.96	2.15	2.23	1.10	1.32	5.22	7.39	6.32	8.71	304.45
YMR175W	SIP18	0.99	1.17	1.34	1.80	2.03	2.28	0.34	1.92	13.89	6.80	14.23	8.72	282.18
YOR023C	AHC1	0.98	1.40	1.66	2.05	2.20	2.35	0.39	1.06	13.28	7.66	13.67	8.72	273.77
YEL013W	VAC8	0.93	1.23	1.34	1.74	1.93	2.07	0.35	0.05	25.51	8.68	25.85	8.74	318.99
YKL034W	TUL1	0.98	1.31	1.52	2.07	2.24	2.37	2.12	1.03	28.96	7.72	31.09	8.75	296.67
YPR021C	AGC1	1.03	1.38	1.61	2.02	2.17	2.33	0.35	0.16	16.40	8.59	16.74	8.75	284.97
YKL043W	PHD1	1.00	1.27	1.46	2.03	2.21	2.31	1.37	1.01	25.20	7.75	26.57	8.76	281.39
YOR009W	TIR4	1.00	1.35	1.61	1.98	2.14	2.29	1.79	0.21	16.29	8.56	18.08	8.77	276.50
YER061C	CEM1	0.98	1.19	1.37	1.91	2.14	2.29	1.60	0.16	29.13	8.62	30.72	8.79	285.74
YPL087W	YDC1	1.07	1.37	1.49	1.92	2.08	2.25	1.43	0.96	20.14	7.83	21.58	8.79	283.08
YLR024C	UBR2	1.05	1.29	1.48	1.84	2.04	2.27	1.04	1.18	9.43	7.64	10.47	8.82	193.97
YGR228W	YGR228w	1.03	1.38	1.58	2.03	2.17	2.32	3.94	3.04	23.78	5.79	27.72	8.83	282.71
YLR142W	PUT1	0.94	1.22	1.40	1.94	2.13	2.23	1.06	1.14	4.41	7.70	5.47	8.84	236.48
YLR093C	NYV1	0.97	1.27	1.48	1.85	1.99	2.18	1.53	1.08	10.24	7.80	11.77	8.88	274.43
YBR178W	YBR178w	0.92	1.11	1.24	1.81	2.07	2.23	0.92	0.16	26.51	8.71	27.43	8.88	290.17
YJR073C	OPI3	1.11	1.58	1.76	2.17	2.31	2.40	3.84	3.02	26.99	5.88	30.83	8.90	245.61
YJR061W	YJR061w	0.86	1.17	1.28	1.65	1.85	2.03	2.24	1.17	30.29	7.74	32.53	8.91	276.61
YPR121W	THI22	0.87	1.15	1.31	1.75	1.92	2.10	3.35	3.32	12.07	5.61	15.42	8.93	250.69
YGR201C	YGR201c	0.94	1.36	1.57	1.97	2.16	2.30	3.24	3.20	12.49	5.73	15.73	8.93	286.05
YMR158C-B	YMR158C-B	0.98	1.43	1.62	2.01	2.18	2.29	3.48	3.09	19.89	5.84	23.38	8.93	305.29
YGR049W	SCM4	0.99	1.37	1.61	2.08	2.23	2.29	1.21	1.03	17.56	7.93	18.77	8.96	285.90
YOL098C	YOL098c	0.94	1.44	1.60	2.02	2.18	2.28	3.80	2.97	21.87	6.00	25.67	8.98	265.22
YPL090C	RPS6a	1.07	1.32	1.46	1.95	2.16	2.34	1.59	0.94	30.54	8.03	32.13	8.98	240.16
YMR237W	BCH1	0.94	1.07	1.23	1.67	1.91	2.16	0.92	0.18	24.94	8.84	25.87	9.01	298.78
YER149C	PEA2	0.98	1.30	1.53	1.87	2.08	2.21	0.72	0.74	9.36	8.29	10.08	9.03	271.67
YBR090C	YBR090c	0.94	1.17	1.38	1.92	2.11	2.26	1.93	0.65	28.45	8.37	30.38	9.03	294.44
YOR067C	ALG8	1.02	1.32	1.48	1.88	2.07	2.24	1.13	0.24	25.80	8.82	26.93	9.06	276.26
YKL132C	RMA1	0.96	1.24	1.42	1.83	2.00	2.10	1.51	1.01	22.28	8.09	23.79	9.10	291.92
YHR157W	REC104	0.90	1.19	1.37	1.92	2.08	2.18	1.27	1.03	4.44	8.08	5.71	9.11	316.80
YJL020C	BBC1	0.96	1.42	1.61	1.97	2.14	2.25	0.63	0.71	14.50	8.42	15.13	9.13	259.98
YJL146W	IDS2	1.02	1.29	1.44	1.89	2.04	2.20	2.51	1.08	30.34	8.09	32.85	9.17	299.30
YNL273W	TOF1	1.05	1.36	1.51	1.94	2.16	2.29	2.23	0.07	21.58	9.09	23.81	9.17	281.30
YPL046C	ELC1	0.87	1.23	1.60	1.74	1.91	2.06	3.09	3.13	4.88	6.06	7.97	9.19	240.20
YCR003W	MRPL32	0.94	1.16	1.30	1.63	1.89	2.07	1.66	1.49	13.93	7.72	15.58	9.21	252.40
YPL110C	GDE1	0.96	1.22	1.41	1.94	2.12	2.30	-0.13	0.22	1.05	9.00	0.92	9.23	264.61
YHR123W	EPT1	0.88	1.12	1.24	1.71	1.93	2.02	1.14	1.12	9.63	8.26	10.77	9.38	287.48
YBR099C	YBR099c	0.97	1.24	1.49	1.92	2.12	2.26	1.34	0.78	25.09	8.61	26.43	9.39	291.31
YGR035C	YGR035c	0.93	1.21	1.41	1.89	2.09	2.17	1.05	0.97	19.66	8.44	20.71	9.40	279.20
YGR163W	GTR2	1.02	1.44	1.72	2.19	2.32	2.41	1.95	0.09	27.64	9.32	29.59	9.41	284.22
YLR130C	ZRT2	0.98	1.25	1.46	2.01	2.23	2.36	1.18	0.86	7.55	8.57	8.73	9.43	245.00
YNL281W	HCH1	0.94	1.23	1.45	1.89	2.10	2.22	0.40	-0.01	19.48	9.44	19.88	9.44	279.81
YHR155W	YSP1	0.95	1.27	1.49	2.00	2.15	2.25	1.12	0.99	0.54	8.48	1.66	9.47	310.88
YLR453C	RIF2	0.96	1.29	1.43	1.71	1.89	2.05	4.31	3.10	25.19	6.40	29.50	9.49	315.93
YGR208W	SER2	0.85	1.19	1.33	1.67	1.92	2.07	2.35	1.53	21.93	8.05	24.28	9.57	258.15
YOR052C	YOR052c	0.95	1.36	1.62	2.00	2.14	2.27	1.19	0.16	25.67	9.41	26.86	9.58	273.84
YEL041W	YEF1	1.00	1.40	1.60	2.00	2.13	2.23	1.27	0.13	26.89	9.54	28.16	9.67	282.23
YGR154C	GTO1	1.04	1.47	1.72	2.14	2.26	2.38	1.36	0.21	27.92	9.47	29.29	9.68	282.90
YDR066C	RTR2	0.94	1.13	1.30	1.80	2.00	2.18	0.33	0.06	18.33	9.66	18.66	9.72	299.38
YPL035C	YPL035c	0.84	1.07	1.17	1.56	1.71	1.89	3.45	3.50	18.03	6.23	21.48	9.73	263.91
YJR044C	VPS55	0.90	1.11	1.27	1.62	1.78	1.88	1.21	0.81	21.82	8.97	23.02	9.77	277.15

ORF.name	Strain	Optical density at 600 nm at regular intervals (hours)						GLUCOSE		FRUCTOSE		TOTAL SUGARS (g/l)		TOTAL AMINO ACIDS (mg/L)
		0	26	33	48	59	78	102 h	118 h	102 h	118 h	102 h	118 h	102 h
YPL086C	*ELP3*	1.10	1.47	1.62	2.07	2.24	2.39	1.98	0.95	28.50	8.84	30.48	9.79	269.20
YGR250C	*YGR250c*	0.91	1.10	1.29	1.75	1.96	2.16	1.48	0.68	20.87	9.21	22.36	9.89	274.95
YDR401W	*YDR401w*	0.90	1.18	1.34	1.80	1.98	2.08	1.27	0.39	26.53	9.52	27.80	9.91	294.58
YOR033C	*EXO1*	1.07	1.50	1.79	2.16	2.30	2.42	1.12	0.14	25.99	9.78	27.11	9.92	284.27
YGR291C	*YGR291c*	0.96	1.21	1.38	1.74	1.92	2.08	0.97	0.90	16.58	9.09	17.55	10.00	271.27
YML100W-A	*YML100w-a*	1.03	1.64	1.84	2.23	2.35	2.44	3.85	3.07	23.60	6.93	27.45	10.00	276.81
YCR095C	*OCA4*	0.87	0.99	1.15	1.63	1.91	2.14	1.10	0.71	19.70	9.32	20.80	10.03	265.67
YBR126C	*TPS1*	0.93	1.28	1.44	1.79	2.04	2.24	0.67	0.72	5.09	9.33	5.76	10.06	298.15
YDL171C	*GLT1*	0.98	1.42	1.55	1.93	2.13	2.28	0.71	0.74	8.66	9.32	9.37	10.06	280.64
YGR088W	*CTT1*	0.98	1.20	1.41	1.94	2.14	2.22	1.84	1.05	25.46	9.01	27.30	10.06	287.30
YBR141C	*YBR141c*	0.87	1.13	1.34	1.77	1.98	2.06	0.63	0.80	7.73	9.28	8.36	10.08	267.15
YOR221C	*MCT1*	0.93	1.25	1.44	1.78	2.00	2.15	1.80	1.38	20.68	8.71	22.49	10.09	277.00
YMR246W	*FAA4*	1.07	1.28	1.48	1.91	2.13	2.33	0.77	0.08	26.86	10.11	27.63	10.19	305.18
YDR504C	*SPG3*	0.96	1.32	1.56	2.00	2.18	2.26	1.94	0.86	26.70	9.35	28.64	10.21	284.70
YMR219W	*ESC1*	0.95	1.15	1.38	1.84	2.10	2.48	0.72	0.26	20.81	9.95	21.52	10.21	278.12
YGR045C	*YGR045c*	1.06	1.44	1.67	2.16	2.32	2.39	1.74	1.00	27.30	9.23	29.04	10.22	308.56
YAL007C	*ERP2*	0.95	1.18	1.43	1.79	1.95	2.16	3.16	1.56	28.96	8.67	32.12	10.23	220.25
YGL212W	*VAM7*	0.89	1.10	1.17	1.45	1.60	1.83	0.72	1.01	28.88	9.23	29.60	10.24	297.73
YGR085C	*RPL11b*	1.03	1.31	1.47	1.96	2.18	2.29	1.09	1.04	18.69	9.21	19.78	10.25	275.50
YGR089W	*NNF2*	0.95	1.19	1.44	1.95	2.14	2.30	3.25	0.85	20.58	9.42	23.83	10.26	287.06
YCR048W	*ARE1*	0.90	1.18	1.31	1.66	1.87	2.07	1.57	1.30	15.43	9.00	17.00	10.30	265.83
YDR514C	*YDR514c*	0.94	1.31	1.52	1.94	2.12	2.22	1.61	0.94	21.30	9.38	22.91	10.32	222.80
YLR216C	*CPR6*	0.97	1.23	1.42	2.00	2.22	2.36	1.26	0.75	22.03	9.61	23.29	10.36	294.54
YDR500C	*RPL37b*	0.89	1.16	1.26	1.69	1.98	2.11	2.14	0.86	29.31	9.50	31.45	10.37	229.55
YPR040W	*TIP41*	0.99	1.40	1.61	1.95	2.11	2.25	4.11	2.86	24.31	7.51	28.41	10.37	293.85
YGL260W	*YGL260w*	0.99	1.31	1.47	1.90	2.08	2.26	1.24	1.08	16.84	9.30	18.08	10.37	294.49
YMR297W	*PRC1*	1.00	1.32	1.58	1.98	2.17	2.35	0.56	2.57	17.23	7.86	17.79	10.43	290.19
YIL135C	*VHS2*	1.02	1.10	1.29	1.57	1.69	2.00	0.85	1.15	12.45	9.29	13.30	10.44	253.80
YOR037W	*CYC2*	1.03	1.45	1.72	2.13	2.27	2.40	0.42	2.32	16.68	8.14	17.10	10.45	273.09
YDR509W	*YDR509w*	0.98	1.37	1.56	1.87	2.07	2.12	1.19	0.78	16.12	9.67	17.31	10.45	317.70
YJL199C	*YJL199c*	0.96	1.25	1.45	1.88	2.05	2.25	1.69	1.14	23.35	9.31	25.04	10.46	292.84
YLR192C	*HCR1*	0.92	1.09	1.26	1.76	1.97	2.16	1.42	1.06	21.47	9.42	22.88	10.48	265.75
YGL209W	*MIG2*	0.98	1.38	1.56	2.03	2.20	2.35	0.89	0.51	7.95	9.97	8.84	10.49	269.67
YLR269C	*YLR269c*	1.05	1.30	1.47	1.91	2.08	2.27	1.04	0.89	18.32	9.67	19.36	10.56	300.00
YLL060C	*GTT2*	0.94	1.13	1.32	1.69	1.86	2.10	1.40	1.16	4.18	9.43	5.58	10.59	143.04
YGL218W	*YGL218w*	0.86	1.04	1.23	1.62	1.85	1.99	1.90	0.97	24.68	9.63	26.58	10.60	275.52
YGR122C-A	*YGR122c-a*	0.95	1.20	1.41	1.85	2.06	2.18	2.15	0.77	28.91	9.84	31.06	10.61	289.95
YOL015W	*IRC10*	1.00	1.36	1.58	1.98	2.14	2.31	1.59	0.17	7.07	10.48	8.66	10.65	273.25
YCR087W	*YCR087w*	0.89	1.25	1.38	1.73	1.91	2.03	1.42	0.70	26.98	9.95	28.40	10.66	293.08
YOR043W	*WHI2*	1.04	1.39	1.58	2.07	2.26	2.38	0.52	-0.10	23.10	10.86	23.63	10.76	290.64
YDR193W	*YDR193w*	0.92	1.14	1.24	1.63	1.80	1.98	1.86	1.14	23.84	9.63	25.70	10.77	271.86
YNL226W	*YNL226w*	0.98	1.41	1.51	1.93	2.10	2.25	3.11	3.21	12.07	7.56	15.18	10.77	273.67
YJL062W	*LAS21*	1.00	1.48	1.69	2.06	2.21	2.29	3.34	3.08	14.71	7.69	18.05	10.78	277.13
YDR447C	*RPS17b*	0.97	1.29	1.48	1.89	2.14	2.26	2.02	0.95	25.23	9.86	27.25	10.81	305.47
YAR027W	*UIP3*	0.89	1.16	1.39	1.70	1.85	2.06	3.18	1.55	24.30	9.29	27.48	10.84	191.65

Appendix 5. Shortlisted 299 candidates from the WYDL_HN based on sugars at the (67 h) time point.

	ODs (h)					GLUCOSE		FRUCTOSE		TOTAL sugars (g/L)		TOTAL AMINO ACIDS (mg/L)
ORF	0	20	27	42	67	43 h	67 h	43 h	67 h	43 h	67 h	48 h
YOR113W	0.96	1.56	1.82	2.18	2.26	13.29	-0.07	70.36	1.54	83.65	1.47	180.14
YBR299W	0.89	1.57	1.87	2.12	2.27	10.37	-0.25	74.34	2.04	84.71	1.80	68.15
YFR011C	0.96	1.80	2.02	2.24	2.27	13.80	0.25	65.21	2.46	79.01	2.71	253.86
YOR358W	1.04	1.82	1.92	2.12	2.24	12.22	0.19	81.63	2.73	93.85	2.91	273.56
YMR029C	1.03	1.85	2.09	2.34	2.36	10.63	-0.03	77.65	2.98	88.28	2.95	273.96
YPR133W-A	0.95	1.46	1.85	1.94	2.16	22.17	2.81	98.65	0.73	120.83	3.54	45.08
YPR063C	0.98	1.92	2.16	2.34	2.36	10.59	1.49	69.63	2.20	80.22	3.69	161.27
YIL035C	0.97	1.84	1.72	2.04	2.08	16.44	-0.26	94.11	4.00	110.55	3.74	324.06
YGR070W	0.95	1.77	2.01	2.25	2.30	11.78	0.32	67.87	3.48	79.65	3.80	68.89
YNL255C	1.01	1.78	1.99	2.25	2.26	9.23	0.26	69.80	3.88	79.03	4.14	96.94
YNL078W	1.00	1.80	1.92	2.11	2.19	7.32	0.04	57.74	4.13	65.05	4.17	9.93
YPR149W	1.10	1.80	2.07	2.40	2.47	25.90	0.45	98.39	3.86	124.29	4.31	-3.34
YJL020C	0.96	1.63	1.90	2.21	2.25	15.48	-0.25	91.50	4.74	106.98	4.49	238.51
YPR058W	0.98	1.75	2.13	2.30	2.32	7.35	1.19	62.08	3.47	69.43	4.66	100.40
YGR101W	0.99	1.46	1.79	2.22	2.32	33.00	1.55	103.37	3.68	136.36	5.23	158.03
YNL145W	0.90	1.31	1.43	1.70	1.80	29.32	1.82	99.16	3.47	128.48	5.28	405.30
YGL016W	0.87	1.60	1.84	2.07	2.14	11.03	0.18	60.75	5.12	71.79	5.30	46.72
YGL080W	0.95	1.80	2.02	2.24	2.28	9.71	0.30	58.67	5.17	68.38	5.47	187.65
YDL082W	1.01	1.98	2.06	2.16	2.24	8.90	0.50	65.79	4.99	74.69	5.50	74.07
YIL055C	0.91	1.56	1.80	2.08	2.14	8.47	0.25	34.40	5.26	42.87	5.51	271.19
YGR132C	1.00	1.86	2.07	2.25	2.32	9.88	-0.07	74.40	5.92	84.28	5.86	150.49
YOL098C	1.02	2.05	1.82	1.95	2.08	9.51	-0.02	67.31	5.96	76.82	5.95	48.90
YHR071W	0.94	1.55	1.83	2.17	2.18	17.94	0.50	95.52	5.71	113.46	6.21	322.72
YJL142C	0.96	1.87	2.08	2.34	2.34	6.08	0.24	52.52	6.10	58.61	6.34	129.16
YPL203W	0.92	1.38	1.61	1.90	1.97	9.93	1.92	58.42	4.44	68.35	6.37	180.04
YGR109C	0.96	1.44	1.78	2.26	2.34	30.01	1.80	100.26	4.70	130.27	6.50	208.79
YOR252W	1.03	1.88	2.17	2.32	2.39	15.52	1.09	66.13	5.45	81.64	6.54	231.81
YGR067C	1.05	1.57	1.92	2.35	2.39	39.37	1.34	128.93	5.24	168.30	6.58	141.33
YJR100C	1.01	1.97	2.18	2.29	2.37	10.77	0.40	54.81	6.27	65.58	6.66	292.38
YGL139W	0.94	1.55	1.79	2.13	2.21	19.08	0.61	73.32	6.21	92.40	6.82	256.91
YGR052W	0.98	1.48	1.76	2.16	2.23	28.95	0.42	121.96	6.43	150.91	6.85	179.92
YGR014W	0.93	1.44	1.79	2.20	2.26	32.80	0.73	125.36	6.21	158.16	6.94	98.15
YLR413W	0.95	1.53	1.83	2.22	2.29	12.70	0.03	70.07	6.98	82.77	7.01	355.30
YJR073C	1.11	1.87	1.99	2.21	2.28	22.49	-0.25	78.41	7.27	100.90	7.03	160.05
YPL017C	1.19	2.38	2.22	2.45	2.45	15.58	1.93	77.56	5.25	93.14	7.18	266.55
YGR055W	1.02	1.58	1.87	2.24	2.34	37.70	0.50	133.38	6.79	171.09	7.28	138.73
YIL010W	0.93	1.78	2.09	2.22	2.29	8.99	0.11	49.80	7.29	58.79	7.40	352.74
YAL015C	0.88	1.61	1.89	2.23	2.31	16.93	1.76	87.42	5.65	104.35	7.41	167.59
YCL010C	0.97	1.61	1.89	2.21	2.35	10.91	-0.16	60.26	7.63	71.17	7.47	235.04
YDR368W	0.96	1.50	1.73	2.14	2.22	11.06	1.61	47.70	6.09	58.76	7.70	288.28
YBR114W	1.08	1.86	2.10	2.37	2.41	11.17	1.52	68.80	6.21	79.98	7.72	254.64
YGR043C	0.96	1.25	1.56	2.09	2.21	33.42	1.82	106.06	6.09	139.48	7.90	277.17
YGR041W	0.99	1.32	1.69	2.22	2.30	40.56	2.24	127.99	5.76	168.55	8.01	180.67
YDL203C	0.92	1.53	1.79	2.13	2.26	14.52	0.11	79.20	7.92	93.72	8.03	168.07
YPR061C	1.00	1.74	2.02	2.25	2.32	11.96	1.61	72.31	6.43	84.27	8.04	212.13
YGL087C	0.95	1.53	1.77	2.11	2.20	12.39	0.45	60.99	7.90	73.38	8.35	205.13
YJL165C	0.97	1.89	2.10	2.31	2.33	9.55	0.06	58.12	8.31	67.67	8.38	66.42
YIL164C	0.96	1.65	1.91	2.21	2.23	17.76	0.05	99.94	8.37	117.70	8.42	157.59
YPR071W	0.96	1.70	2.01	2.07	2.31	17.55	1.56	86.68	6.95	104.22	8.51	190.19
YGR129W	0.96	1.33	1.74	2.27	2.32	41.60	2.92	119.94	5.62	161.54	8.54	295.77
YAL044W-A	0.95	1.90	2.20	2.40	2.48	10.64	1.64	51.44	6.95	62.07	8.59	109.70
YER089C	1.04	1.62	1.88	2.27	2.31	14.96	1.37	52.46	7.37	67.42	8.75	295.77
YDL156W	1.01	1.80	2.10	2.32	2.41	13.99	-0.16	74.20	8.98	88.18	8.82	105.49
YGR296W	0.96	1.89	1.90	2.01	2.10	8.33	0.47	56.92	8.49	65.25	8.96	163.40
YOR225W	1.02	1.87	2.08	2.31	2.31	9.04	0.06	64.06	8.91	73.11	8.97	128.50
YIL156W	0.96	1.64	1.91	2.17	2.26	6.96	0.21	52.93	8.82	59.89	9.02	112.36
YKR088C	0.96	1.66	1.76	2.02	2.11	14.60	-0.05	74.94	9.19	89.55	9.14	182.15
YKL213C	1.00	1.75	2.01	2.20	2.30	16.95	0.09	70.66	9.12	87.61	9.21	312.08
YGR059W	0.94	1.39	1.72	2.18	2.23	33.22	1.82	119.27	7.43	152.48	9.25	231.11
YMR171C	0.95	1.50	1.77	2.10	2.22	18.03	1.26	81.87	8.02	99.90	9.27	308.01
YGR044C	0.93	1.23	1.54	2.05	2.20	31.28	2.74	102.90	6.66	134.18	9.40	310.35
YOR214C	0.99	1.51	1.82	2.08	2.17	11.77	0.35	76.16	9.12	87.93	9.47	204.14
YGR040W	1.07	1.82	2.06	2.29	2.38	11.41	0.04	72.03	9.48	83.44	9.52	154.24
YDL091C	0.98	1.72	1.97	2.24	2.31	10.99	-0.12	64.50	9.64	75.49	9.53	109.82
YJL159W	0.99	1.69	1.99	2.34	2.35	10.47	0.19	62.66	9.36	73.13	9.54	111.95
YHR209W	0.93	1.69	1.93	2.17	2.26	16.45	-0.19	69.22	9.84	85.67	9.65	314.61
YPL119C	0.96	1.53	1.95	2.21	2.28	13.43	1.05	82.53	8.65	95.96	9.70	125.34
YGR123C	0.94	1.23	1.51	2.04	2.14	37.57	3.26	112.00	6.46	149.57	9.73	169.38
YDL144C	1.02	1.80	2.06	2.30	2.38	13.44	-0.11	75.72	9.84	89.16	9.73	72.23
YKL062W	1.04	1.92	2.13	2.35	2.40	8.02	0.04	60.67	9.75	68.69	9.79	96.07
YER174C	0.96	1.63	1.90	2.19	2.26	13.69	-0.29	68.90	10.09	82.58	9.80	137.37
YGR016W	0.93	1.65	1.95	2.21	2.27	14.24	-0.14	69.45	10.04	83.69	9.90	67.62
YGL246C	0.98	1.67	1.95	2.20	2.27	16.87	-0.27	92.53	10.24	109.40	9.97	80.68
YDR003W	0.98	1.67	1.98	2.22	2.31	16.36	0.38	74.84	9.62	91.20	10.01	195.95
YIR032C	0.98	1.89	2.10	2.25	2.35	16.18	-0.18	81.22	10.20	97.41	10.02	316.07
YEL007W	1.01	1.58	1.88	2.21	2.29	10.53	0.84	56.33	9.25	66.86	10.08	257.56
YGL064C	0.96	1.60	1.72	2.01	2.10	13.27	0.43	67.55	9.84	80.82	10.27	115.23
YGL079W	0.98	1.84	2.04	2.26	2.31	12.67	0.66	65.47	9.64	78.14	10.31	111.35
YLR027C	0.99	1.63	1.93	2.27	2.34	8.44	-0.14	50.91	10.50	59.35	10.37	225.42
YGL231C	0.94	1.70	1.94	2.17	2.21	14.83	0.82	83.48	9.68	98.31	10.50	196.78
YIR031C	0.90	1.35	1.65	2.07	2.13	21.65	0.17	107.88	10.36	129.52	10.53	168.49
YDL154W	0.98	1.76	2.04	2.28	2.36	13.69	-0.05	65.94	10.68	79.63	10.63	78.35
YFR047C	0.99	1.48	1.79	2.21	2.24	12.92	1.18	60.47	9.50	73.39	10.68	74.87
YGL242C	0.88	1.38	1.73	2.06	2.15	22.50	0.29	98.15	10.58	120.65	10.86	164.14
YGL253W	0.92	1.23	1.53	2.05	2.18	43.90	0.45	136.75	10.49	180.65	10.93	166.08
YLR095C	0.99	1.72	2.00	2.22	2.31	12.67	-0.07	77.12	11.03	89.78	10.95	206.35
YDL178W	1.03	1.78	2.07	2.31	2.38	13.11	-0.09	70.56	11.12	83.67	11.03	142.08
YOR101W	1.02	1.74	1.97	2.08	2.18	10.68	0.43	63.77	10.74	74.45	11.17	109.84
YDR486C	1.07	1.65	1.93	2.28	2.36	11.38	2.29	49.28	8.97	60.66	11.26	266.45
YDR320C	1.06	1.91	2.14	2.31	2.41	10.49	3.09	66.20	8.22	76.69	11.31	87.09
YHR043C	0.94	1.36	1.65	2.12	2.18	14.70	0.36	82.57	10.97	97.27	11.33	151.86
YGR032W	0.98	1.32	1.64	2.14	2.25	47.37	2.93	136.08	8.40	183.45	11.33	146.23
YCL009C	0.93	1.51	1.81	2.16	2.26	16.45	0.04	76.89	11.33	93.34	11.37	122.66
YCL001W-A	1.02	1.81	2.08	2.32	2.40	14.66	0.29	67.72	11.12	82.38	11.40	138.28
YGR051C	0.97	1.50	1.79	2.20	2.28	31.23	0.68	117.16	10.77	148.39	11.45	111.04
YHR087W	0.93	1.40	1.69	2.10	2.15	17.79	0.14	86.06	11.37	103.85	11.50	155.37
YER118C	1.06	1.55	1.80	2.17	2.22	13.98	1.75	52.83	9.87	66.80	11.61	188.49
YMR254C	1.00	1.60	1.62	1.97	2.11	9.72	0.16	76.28	11.53	86.00	11.69	63.55
YGR066C	0.97	1.85	2.06	2.25	2.29	18.95	0.43	72.88	11.31	91.83	11.74	264.93
YDL121C	0.95	1.47	1.76	2.17	2.26	17.69	0.02	79.41	11.74	97.10	11.76	238.36
YHR178W	0.96	1.63	1.90	2.22	2.28	30.05	-0.09	124.57	11.89	154.62	11.80	116.64
YDL099W	0.98	1.60	1.89	2.23	2.29	13.16	-0.02	71.18	11.83	84.34	11.81	127.32
YPL247C	0.97	1.60	2.00	2.26	2.35	14.46	1.38	75.15	10.43	89.60	11.81	116.73
YDR358W	1.04	1.49	1.71	2.08	2.16	11.04	1.33	56.86	10.51	67.89	11.83	86.48
YKL071W	0.97	1.84	1.82	2.10	2.21	16.23	0.06	68.31	11.80	84.54	11.86	114.91
YPR152C	1.05	1.87	2.21	2.38	2.46	19.09	1.33	91.23	10.55	110.32	11.88	73.57
YGL261C	0.98	1.64	1.93	2.22	2.28	17.72	0.47	86.32	11.47	104.04	11.94	115.53
YIL042C	0.91	1.53	1.82	2.08	2.16	11.73	0.03	55.42	11.94	67.16	11.97	88.66
YNL318C	1.01	1.72	1.96	2.23	2.27	15.35	0.24	68.31	11.73	83.66	11.97	321.92
YGR105W	0.95	1.79	2.02	2.23	2.27	11.19	0.24	66.99	11.74	78.18	11.99	145.68
YGL248W	0.97	1.67	1.95	2.20	2.26	16.53	0.50	82.31	11.51	98.84	12.02	170.27
YEL012W	0.98	1.86	1.84	2.11	2.20	17.16	1.73	62.28	10.33	79.44	12.06	296.53
YPL095C	0.96	1.59	1.95	2.19	2.29	20.50	1.69	83.58	10.38	104.08	12.07	275.85
YPR149C	1.04	1.59	2.05	2.28	2.37	19.32	1.63	92.62	10.46	111.94	12.09	119.72
YFR010W	0.98	1.54	1.79	2.13	2.21	19.32	0.84	69.10	11.26	88.42	12.10	221.27
YIL027C	0.93	1.74	1.96	2.18	2.24	10.06	0.25	56.07	11.89	66.13	12.14	379.41
YDL200C	0.95	1.69	1.97	2.22	2.32	11.02	0.32	67.17	11.85	78.19	12.17	107.24
YGR019W	1.01	1.45	1.81	2.28	2.35	38.84	1.86	118.54	10.34	157.38	12.20	259.71
YIL044C	0.92	1.50	2.01	1.86	2.05	12.42	0.22	65.56	12.01	77.97	12.23	210.74
YGL027C	1.01	1.60	1.90	2.10	2.17	21.30	1.49	97.51	10.76	118.81	12.25	126.92
YFR033C	0.96	1.62	1.88	2.17	2.25	14.86	0.65	65.53	11.64	80.38	12.29	151.28
YIL009C-A	0.93	1.55	1.84	2.04	2.13	13.46	-0.11	53.40	12.41	66.86	12.30	249.05
YGL119W	0.97	1.68	2.32	1.93	2.07	14.48	0.44	76.51	11.91	90.99	12.35	120.15
YJR115W	1.04	1.66	1.87	1.97	2.07	33.27	0.00	95.11	12.37	128.38	12.37	270.11
YDL243C	0.97	1.79	2.05	2.28	2.34	15.28	0.35	73.82	12.07	89.10	12.42	116.25
YDL093W	0.95	1.72	2.01	2.27	2.35	15.24	1.26	68.90	11.21	84.14	12.46	140.60

	ODs (h)					GLUCOSE		FRUCTOSE		TOTAL sugars (g/L)		TOTAL AMINO ACIDS (mg/L)
ORF	0	20	27	42	67	43 h	67 h	43 h	67 h	43 h	67 h	48 h
YGR004W	1.04	1.85	2.05	2.23	2.30	18.48	-0.26	94.84	12.73	113.32	12.47	65.83
YDL174C	0.91	1.63	1.94	2.26	2.33	17.32	0.59	79.61	11.89	96.94	12.48	168.69
YGR080W	1.02	1.72	1.96	2.25	2.33	15.53	0.14	80.76	12.39	96.28	12.53	120.08
YPL121C	0.96	1.39	1.78	2.02	2.12	17.52	1.17	89.27	11.41	106.80	12.58	113.24
YGR178C	0.93	1.35	1.59	2.05	2.18	26.95	0.56	102.60	12.07	129.55	12.62	252.42
YKL070W	1.00	1.66	1.76	2.04	2.13	15.68	0.29	64.56	12.34	80.24	12.62	108.27
YPL164C	1.01	1.53	1.95	2.19	2.25	17.90	1.26	89.19	11.38	107.09	12.64	117.02
YKL017C	1.08	1.66	1.78	2.07	2.16	16.15	0.17	69.22	12.48	85.36	12.65	106.60
YDL117W	0.98	1.55	1.86	2.28	2.31	22.41	2.02	75.53	10.62	97.95	12.65	282.31
YDL239C	0.96	1.76	2.05	2.28	2.37	13.32	0.79	72.38	11.87	85.70	12.66	119.62
YKL120W	1.03	1.73	1.99	2.23	2.31	21.08	0.37	83.66	12.28	104.73	12.66	112.31
YNL176C	0.76	1.02	1.51	1.78	1.91	13.47	1.22	77.50	11.47	90.97	12.69	85.56
YGL257C	0.98	1.55	1.80	2.11	2.21	20.96	0.64	94.29	12.09	115.25	12.73	148.82
YIL050W	0.88	1.30	1.51	1.84	1.91	15.68	0.23	68.08	12.55	83.76	12.78	227.86
YFR016C	1.08	1.77	2.04	2.35	2.38	23.16	1.62	87.34	11.17	110.50	12.80	202.90
YGL191W	0.85	1.27	1.56	1.92	2.04	23.69	0.61	103.72	12.19	127.40	12.81	147.07
YFL051C	0.93	1.76	1.91	1.99	2.15	15.59	0.73	64.27	12.10	79.86	12.83	102.48
YGL013C	0.98	1.63	1.88	2.23	2.29	17.07	1.40	80.94	11.52	98.01	12.92	243.33
YGL129C	0.97	1.77	1.99	2.20	2.25	13.82	0.44	78.38	12.55	92.21	12.99	144.82
YDL168W	0.97	1.63	2.24	1.99	2.00	13.41	0.03	68.22	12.98	81.63	13.01	146.26
YFL053W	0.93	2.32	1.94	1.72	1.72	12.53	0.89	59.67	12.16	72.20	13.04	220.19
YOR337W	0.96	1.58	1.80	2.08	2.13	18.94	0.68	86.23	12.44	105.18	13.12	370.65
YGR015C	0.96	1.69	1.99	2.25	2.32	23.41	0.49	100.29	12.70	123.70	13.19	175.24
YGL178W	1.10	1.76	2.07	2.35	2.42	16.77	1.80	67.96	11.54	84.73	13.34	332.81
YPR117W	1.04	1.78	2.08	2.31	2.38	13.88	1.29	80.98	12.05	94.86	13.34	124.84
YJR133W	1.03	1.67	1.86	2.13	2.22	19.93	0.14	76.16	13.23	96.09	13.38	98.70
YBR268W	1.03	1.92	2.20	2.36	2.44	13.51	0.09	73.17	13.31	86.68	13.40	154.65
YPL027W	0.98	1.40	1.68	2.00	2.14	25.97	1.47	97.81	11.93	123.78	13.40	314.83
YJR025C	0.99	1.55	1.77	2.04	2.13	30.53	0.18	88.17	13.25	118.70	13.43	155.37
YGR212W	0.89	1.41	1.65	1.97	2.04	12.97	0.35	56.33	13.11	69.30	13.46	149.71
YPL202C	0.95	1.32	1.75	1.98	2.04	20.18	1.53	91.61	11.96	111.79	13.49	154.75
YGL131C	0.96	1.47	1.76	2.18	2.22	17.69	1.75	68.00	11.74	85.69	13.49	179.66
YIR025W	1.01	1.82	2.11	2.31	2.39	17.42	0.17	70.04	13.36	87.45	13.53	194.99
YDL161W	0.99	1.73	2.17	2.15	2.24	15.73	0.46	71.03	13.07	86.77	13.53	243.95
YDL100C	0.98	1.56	1.84	2.19	2.31	22.04	0.15	91.53	13.58	113.57	13.73	207.02
YDL123W	0.90	1.41	1.71	2.09	2.19	23.23	0.11	98.09	13.63	121.32	13.74	124.96
YER161C	1.17	1.96	2.18	2.44	2.48	14.77	1.58	61.55	12.16	76.32	13.74	143.44
YDL114W	0.99	1.61	1.89	2.21	2.31	16.45	0.15	74.84	13.61	91.29	13.76	112.14
YGL020C	0.99	1.61	1.84	2.14	2.22	19.09	0.84	86.96	12.93	106.06	13.77	124.09
YIL009W	0.94	1.54	1.82	2.15	2.22	15.63	0.32	73.82	13.49	89.44	13.81	217.65
YDR392W	1.10	1.66	1.88	2.27	2.33	17.24	1.78	59.53	12.09	76.77	13.87	104.95
YGR146C	0.98	1.67	1.95	2.24	2.29	17.72	0.36	78.38	13.54	96.11	13.90	120.87
YHR142W	0.95	1.19	1.30	1.64	1.78	24.83	0.41	98.50	13.52	123.34	13.93	131.29
YPR145W	1.03	1.78	2.55	2.47	2.39	22.37	1.12	100.95	12.82	123.32	13.94	80.67
YBR264C	1.00	1.74	2.03	2.26	2.37	12.17	-0.09	67.64	14.06	79.80	13.97	98.15
YNL265C	1.08	1.81	2.07	2.33	2.37	15.22	0.38	70.42	13.61	85.64	13.99	151.11
YPL137C	0.93	1.37	1.59	1.90	2.00	18.98	1.45	88.61	12.57	107.59	14.02	99.66
YPR138C	1.17	1.86	2.21	2.39	2.52	21.00	1.59	97.69	12.59	118.69	14.19	70.04
YBR272C	0.98	1.77	2.07	2.31	2.40	16.95	0.29	80.38	13.94	97.33	14.22	105.81
YDL175C	0.95	1.54	1.80	2.15	2.29	20.01	0.74	80.35	13.50	100.35	14.25	239.54
YDR255C	1.04	1.91	2.04	2.25	2.36	10.95	-0.07	65.38	14.33	76.33	14.26	54.62
YKR066C	0.96	1.69	1.96	2.19	2.28	14.57	0.44	75.27	13.83	89.84	14.27	254.98
YGR143W	0.96	1.53	1.79	2.15	2.22	34.02	0.60	134.29	13.68	168.31	14.28	114.99
YER030W	1.01	1.73	2.02	2.29	2.34	18.88	0.25	94.14	14.08	113.02	14.33	78.83
YHL014C	0.94	1.74	2.06	2.30	2.41	22.29	1.52	85.39	12.82	107.68	14.35	116.66
YDL109C	1.03	1.80	2.06	2.27	2.39	19.16	0.14	81.72	14.20	100.89	14.35	133.69
YGL227W	0.97	1.44	1.75	2.20	2.29	38.14	0.45	142.23	13.92	180.37	14.36	220.02
YGL208W	0.97	1.62	1.90	2.07	2.23	18.36	0.26	90.16	14.11	108.52	14.37	113.98
YGR142W	0.97	1.48	1.76	2.15	2.24	33.63	0.46	133.24	13.94	166.87	14.40	143.54
YGR045C	1.00	1.54	1.81	2.20	2.31	33.50	0.77	128.26	13.72	161.76	14.49	124.09
YPL198W	1.05	1.73	2.13	2.31	2.39	10.18	1.50	66.65	13.00	76.83	14.50	110.28
YGR168C	1.03	1.82	2.06	2.30	2.37	16.38	0.27	72.35	14.24	88.73	14.51	128.19
YDL184C	1.01	1.81	2.09	2.34	2.39	16.18	0.38	78.94	14.19	95.12	14.57	99.69
YGR271W	1.01	1.63	1.92	2.22	2.31	18.59	0.17	75.31	14.40	93.90	14.57	173.90
YJL053W	1.10	1.91	2.16	2.36	2.45	18.12	0.16	64.18	14.42	82.30	14.58	207.38
YPL191C	0.95	1.31	1.74	1.93	2.18	23.73	1.54	88.51	13.08	112.24	14.63	126.97
YDL088C	0.85	1.30	1.70	2.00	2.16	25.00	0.45	85.18	14.24	110.18	14.69	99.42
YGL114W	0.85	1.30	1.58	1.93	2.04	25.07	0.82	105.68	13.95	130.75	14.77	80.24
YPL171C	0.97	1.66	1.94	2.19	2.24	15.58	1.48	80.34	13.29	95.92	14.77	108.49
YPL148C	0.92	1.18	1.64	1.97	2.13	26.33	1.49	103.08	13.31	129.42	14.80	79.93
YIR019C	1.00	1.66	1.83	2.12	2.22	17.67	-0.17	71.50	14.98	89.37	14.81	163.36
YHL008C	1.00	1.77	2.06	2.23	2.37	15.76	1.45	70.52	13.43	86.28	14.88	109.78
YHR115C	1.01	1.55	1.85	2.25	2.31	34.74	0.69	146.97	14.22	181.72	14.92	125.48
YGL066W	0.92	1.45	1.68	2.02	2.12	16.91	0.98	74.72	13.95	91.63	14.93	168.50
YFR024C-A	1.04	1.74	1.98	2.30	2.33	15.03	1.50	66.74	13.44	81.78	14.94	152.26
YNL085W	0.87	1.30	1.58	1.91	2.02	17.34	1.92	74.06	13.05	91.40	14.98	230.71
YGR076C	0.86	1.34	1.64	2.01	2.11	22.41	0.90	84.53	14.10	106.94	15.00	120.42
YFR017C	0.91	1.33	1.54	1.89	1.96	17.77	0.88	70.65	14.13	88.43	15.01	93.30
YPR147C	1.03	1.68	2.10	2.32	2.40	16.84	1.36	66.43	13.69	83.27	15.05	52.92
YHR160C	0.95	1.69	1.90	2.19	2.30	17.32	0.40	60.55	14.67	77.87	15.08	246.51
YOR062C	1.00	1.35	1.56	1.84	1.99	16.99	0.43	93.94	14.65	110.92	15.09	98.66
YJL157C	0.94	1.69	1.97	2.28	2.35	11.85	0.56	66.29	14.53	78.13	15.09	103.75
YER184C	1.01	1.54	1.76	2.14	2.19	15.45	1.87	62.62	13.25	78.08	15.13	226.95
YGL026C	0.94	1.56	1.82	2.13	2.19	16.30	1.03	73.84	14.11	90.14	15.15	126.41
YGR263C	0.94	1.64	1.92	2.17	2.25	21.17	1.25	84.68	13.90	105.85	15.15	177.46
YHR168W	0.93	1.81	2.02	2.21	2.27	16.32	0.09	65.67	15.07	82.00	15.15	147.60
YER155C	0.98	1.59	1.84	2.22	2.29	16.76	1.93	68.69	13.23	85.45	15.16	178.11
YKL127W	1.00	1.63	1.89	2.17	2.27	25.79	0.73	86.03	14.44	111.82	15.17	209.60
YDL130W-A	0.88	1.34	1.69	2.10	2.23	19.31	0.06	82.60	15.10	101.92	15.17	83.83
YDR254W	0.86	1.30	1.59	1.98	2.16	17.83	0.09	78.09	15.12	95.92	15.21	130.75
YPR023C	0.88	1.20	1.49	1.80	2.08	25.47	1.62	102.50	13.60	127.97	15.22	170.10
YGL222C	0.96	1.61	1.85	2.15	2.22	22.87	1.32	90.51	13.92	113.37	15.24	144.15
YOR186W	0.93	1.78	2.02	2.12	2.28	10.38	0.98	57.86	14.26	68.23	15.25	188.08
YJR044C	0.98	1.60	1.87	2.14	2.28	23.05	0.17	88.19	15.10	111.25	15.27	176.10
YPR172W	0.94	1.61	1.97	2.31	2.41	28.14	0.85	94.90	14.42	123.05	15.27	-4.52
YGL082W	0.92	1.49	1.74	2.06	2.13	16.68	1.21	72.64	14.06	89.33	15.27	238.34
YPR167C	1.01	1.56	1.92	2.09	2.29	20.19	1.71	91.85	13.57	112.04	15.28	61.45
YGL219C	0.95	1.64	1.89	2.19	2.25	22.13	1.04	94.43	14.24	116.56	15.28	119.62
YGL138C	0.94	1.55	1.79	2.10	2.19	21.38	0.99	92.71	14.29	114.09	15.28	116.68
YGL205W	0.99	1.51	1.86	2.25	2.33	33.85	0.62	113.76	14.67	147.61	15.29	108.44
YDL234C	1.00	1.83	2.10	2.33	2.37	14.14	0.57	69.07	14.73	83.21	15.30	76.94
YDL182W	0.95	1.74	2.00	2.27	2.32	13.86	0.75	70.77	14.55	84.63	15.30	79.53
YGL086W	0.92	1.37	1.52	1.82	1.93	15.40	1.06	69.04	14.24	84.44	15.30	136.63
YMR259C	0.92	1.44	1.70	2.04	2.17	29.92	1.76	104.79	13.54	134.71	15.30	200.16
YIL158W	0.96	1.57	1.84	2.12	2.20	16.51	0.41	69.45	14.91	85.96	15.32	94.93
YPL208W	0.96	1.50	1.78	1.97	2.20	13.73	1.52	64.06	13.83	77.79	15.35	165.05
YER137C	0.98	1.50	1.85	1.92	2.02	17.15	1.71	73.59	13.67	90.73	15.38	197.28
YFR030W	0.88	1.38	1.65	2.01	2.11	18.61	0.80	67.81	14.58	86.42	15.38	94.42
YDL211C	0.90	1.47	1.78	2.14	2.24	19.78	0.76	83.68	14.64	103.46	15.40	149.18
YJL146W	0.97	1.64	1.95	2.28	2.29	13.31	0.66	71.38	14.82	84.70	15.47	259.00
YFR043C	0.92	1.48	1.75	2.08	2.14	16.61	2.34	68.63	13.15	85.24	15.48	171.97
YGL108C	0.88	1.34	1.62	1.99	2.09	24.34	1.16	90.98	14.33	115.31	15.49	123.76
YIL137C	0.94	1.66	1.93	2.19	2.27	12.94	0.11	65.50	15.39	78.44	15.50	108.89
YGR023W	0.99	1.54	1.94	2.32	2.37	43.30	4.06	131.95	11.46	175.24	15.52	275.04
YMR030W	1.04	1.73	1.84	2.14	2.25	15.53	0.34	85.76	15.19	101.30	15.53	257.97
YGL213C	0.92	1.34	1.51	1.88	2.02	26.84	1.15	103.51	14.38	130.35	15.53	172.11
YER185W	0.97	1.67	1.92	2.22	2.29	12.40	0.30	62.92	15.26	75.32	15.56	76.13
YOR213C	1.02	1.58	1.73	2.02	2.13	14.41	0.73	87.78	14.85	102.19	15.58	92.84
YPL138C	0.90	1.49	1.63	1.90	2.12	25.20	1.51	103.28	14.09	126.48	15.60	51.36
YPR027C	1.04	1.82	2.14	2.36	2.41	16.87	1.35	85.55	14.26	102.42	15.62	51.44
YPR134W	1.03	1.65	2.04	2.21	2.38	23.02	1.35	107.77	14.29	130.80	15.64	-13.58
YPR179C	0.99	1.51	1.88	2.19	2.27	15.60	1.78	70.48	13.89	86.07	15.67	86.87
YJR084W	1.06	1.52	1.79	2.17	2.21	10.67	0.68	68.31	15.00	78.98	15.67	88.59
YDL119C	0.94	1.52	1.80	2.14	2.28	18.49	0.24	76.98	15.44	95.47	15.68	10.05
YPL199C	1.01	1.61	2.02	2.18	2.26	15.01	1.48	65.75	14.24	80.76	15.71	108.91
YPR192W	0.98	1.51	1.89	2.02	2.21	25.20	1.89	103.22	13.83	128.43	15.72	133.40
YEL027W	1.03	1.74	2.00	2.33	2.36	18.80	2.25	58.96	13.51	77.77	15.75	200.78
YGR231C	0.93	2.06	2.22	2.41	2.47	13.02	0.13	65.15	15.64	78.17	15.77	144.01
YGL037C	0.92	1.45	1.72	2.02	2.11	16.57	1.49	66.03	14.29	82.60	15.78	289.08
YKL018C-A	1.04	1.72	1.97	2.21	2.31	17.00	0.74	75.60	15.07	92.60	15.80	94.35
YDL238C	1.00	1.78	2.03	2.28	2.37	15.13	1.17	77.01	14.69	92.13	15.86	74.99
YLR028C	0.95	1.58	1.83	2.06	2.18	23.98	0.76	97.83	15.10	121.81	15.86	170.74
YPL249C	0.93	1.44	1.73	1.93	2.20	19.62	1.84	74.10	14.06	93.72	15.91	137.10
YGR155W	0.89	1.48	1.83	2.06	2.20	19.71	1.68	88.29	14.26	108.00	15.94	149.54

	ODs (h)					GLUCOSE		FRUCTOSE		TOTAL sugars (g/L)		TOTAL AMINO ACIDS (mg/L)
ORF	0	20	27	42	67	43 h	67 h	43 h	67 h	43 h	67 h	48 h
YLL038C	0.99	1.75	1.89	2.12	2.19	15.58	0.52	84.28	15.44	99.86	15.96	179.30
YER183C	0.98	1.72	2.01	2.27	2.32	17.94	0.47	73.14	15.52	91.08	15.98	96.81
YGL127C	0.98	1.61	1.85	2.14	2.22	20.70	0.87	94.17	15.12	114.87	15.99	146.60
YKL003C	0.95	1.55	1.84	2.13	2.28	14.37	1.00	62.16	15.00	76.53	15.99	256.67
YER129W	1.03	1.70	1.96	2.29	2.32	17.90	2.28	58.64	13.71	76.55	15.99	322.22
YJR051W	1.02	1.44	1.72	2.17	2.26	20.61	0.19	86.99	15.80	107.61	16.00	110.25
YGR237C	0.94	1.51	1.77	2.10	2.18	18.47	0.48	76.28	15.53	94.75	16.01	199.91
YKR051W	0.96	1.63	1.86	2.13	2.20	12.98	0.61	65.73	15.41	78.71	16.02	199.49
YLR018C	0.97	1.68	1.97	2.19	2.29	23.66	0.45	103.56	15.59	127.22	16.03	165.39
YDL112W	0.99	1.76	2.07	2.33	2.42	15.84	0.30	75.46	15.75	91.30	16.04	158.84
YOL129W	0.97	1.55	1.64	1.94	2.07	15.36	0.56	75.92	15.50	91.29	16.06	227.34
YPL244C	0.96	1.79	1.67	1.93	2.11	19.53	1.50	91.05	14.58	110.57	16.08	169.00
YGL117W	0.96	1.52	1.86	2.27	2.31	22.09	1.59	75.24	14.51	97.32	16.10	100.95
YLR164W	0.97	1.70	2.02	2.26	2.36	27.08	1.30	118.44	14.81	145.52	16.11	174.62
YGR096W	0.99	1.61	1.87	2.17	2.23	17.34	2.01	67.34	14.11	84.68	16.12	160.15
YGR033C	0.91	1.45	1.75	2.10	2.20	30.99	0.70	100.88	15.46	131.87	16.16	139.35
YGL263W	0.92	1.32	1.55	1.88	1.99	24.33	0.94	99.35	15.23	123.68	16.17	128.92
YPR008W	1.10	1.72	2.02	2.31	2.41	37.42	0.79	120.03	15.39	157.45	16.18	-3.73
YIL007C	0.93	1.61	1.85	2.16	2.21	11.56	0.11	62.77	16.13	74.33	16.24	154.70
YLR144C	0.98	1.64	1.92	2.16	2.26	23.63	0.41	104.33	15.84	127.96	16.25	229.82
YGR144W	0.95	1.50	1.82	2.21	2.27	36.13	0.83	132.91	15.43	169.04	16.26	165.44
YLR187W	1.01	1.70	1.91	2.18	2.28	17.47	0.42	76.13	15.84	93.60	16.26	235.49
YGR061C	0.98	1.65	1.87	2.16	2.24	19.52	1.20	79.15	15.12	98.67	16.32	124.33
YFR007W	0.94	1.48	1.70	2.02	2.11	17.77	1.28	65.35	15.05	83.12	16.33	111.25
YPL263C	0.91	1.33	1.82	2.13	2.18	17.75	1.49	83.66	14.84	101.41	16.33	139.68
YBR233W	0.96	1.41	1.73	2.17	2.27	26.73	0.48	92.06	15.88	118.79	16.35	-3.35
YKL038W	1.01	1.46	1.71	2.06	2.09	12.57	0.37	67.67	16.00	80.23	16.37	200.04
YFL049W	0.97	1.59	1.84	2.12	2.22	18.14	0.92	64.09	15.48	82.23	16.40	191.28
YGR273C	1.02	1.58	1.88	2.24	2.29	27.98	0.20	125.33	16.25	153.31	16.45	101.48
YER119C	1.08	1.81	2.09	2.34	2.39	23.07	0.80	101.81	15.66	124.89	16.46	90.65
YMR105W-A	0.99	1.62	1.74	2.05	2.15	21.99	1.50	93.04	14.98	115.03	16.48	157.71
YLR265C	1.04	1.93	1.84	2.13	2.23	18.42	1.47	80.40	15.01	98.82	16.48	121.68
YLL053C	0.98	1.68	1.95	2.17	2.29	22.94	0.70	98.39	15.82	121.33	16.52	164.22
YPR009W	0.98	1.41	1.72	2.17	2.28	37.90	0.71	127.67	15.82	165.57	16.54	-3.97
YKR013W	1.00	1.73	2.00	2.23	2.31	18.39	0.70	73.82	15.86	92.21	16.56	175.48
YHR132C	0.95	1.34	1.81	1.84	2.00	19.91	0.19	101.90	16.38	121.81	16.57	176.25
YOR385W	0.93	1.66	1.96	2.25	2.31	21.50	1.63	93.68	14.96	115.19	16.58	149.32
YIL030C	0.90	1.45	1.72	2.06	2.18	15.84	0.30	69.04	16.29	84.88	16.58	110.64
YNL157W	0.91	1.59	1.83	2.22	2.22	18.01	1.67	76.23	14.93	94.24	16.60	124.72

Appendix 6. Shortlisted 257 deletants from the WYDL_LN based on sugars at the (146 h) time point.

ORF	Optical density at 600 nm at time intervals (h)							GLUCOSE		FRUCTOSE		TOTAL sugars	
	0	20	27	44	67	93	113	120 h	146 h	120 h	146 h	120 h	156 h
YNL145W	0.87	1.15	1.25	1.29	1.42	1.66	1.64	-0.51	0.06	8.29	-0.33	7.79	-0.27
YDR368W	0.90	1.30	1.48	1.54	1.70	1.90	1.88	3.32	0.52	26.28	-0.63	29.60	-0.11
YKL037W	0.86	1.12	1.24	1.31	1.45	1.78	1.69	0.38	0.76	9.47	0.00	9.85	0.77
YDR368W	0.95	1.32	1.43	1.55	1.68	1.87	1.85	9.13	1.04	43.21	-0.17	52.33	0.88
YER118C	0.95	1.47	1.60	1.67	1.81	1.99	1.98	12.55	1.58	40.32	-0.42	52.87	1.16
YER155C	0.90	1.35	1.50	1.59	1.76	1.93	1.93	11.61	1.64	82.99	-0.42	94.60	1.22
YDR486C	0.87	1.19	1.32	1.37	1.51	1.70	1.66	9.61	1.52	31.97	-0.25	41.58	1.27
YER156C	0.90	1.41	1.59	1.74	1.87	2.04	2.04	10.83	1.67	77.80	-0.38	88.63	1.29
YDR379W	0.90	1.31	1.47	1.54	1.69	1.89	1.86	11.91	1.26	33.59	0.07	45.50	1.32
YER129W	0.91	1.35	1.49	1.57	1.72	1.89	1.85	13.44	1.65	69.55	-0.27	82.99	1.37
YDR359C	0.94	1.17	1.32	1.43	1.56	1.73	1.70	12.28	1.57	56.78	-0.08	69.06	1.49
YDR363W-A	0.91	1.35	1.58	1.58	1.73	1.91	1.89	14.71	2.09	63.21	-0.21	77.92	1.88
YER184C	0.98	1.55	1.69	1.77	1.91	2.07	2.05	17.72	2.34	91.27	-0.29	108.99	2.05
YER167W	1.00	1.47	1.63	1.76	1.88	2.05	2.04	17.00	2.30	93.60	-0.23	110.60	2.08
YDR383C	0.90	1.34	1.50	1.61	1.75	1.95	1.92	15.63	2.47	30.74	-0.14	46.37	2.32
YEL027W	0.92	1.34	1.47	1.56	1.70	1.87	1.84	16.69	2.54	39.38	0.13	56.08	2.67
YDR370C	0.90	1.39	1.58	1.66	1.80	1.98	1.97	16.70	2.35	43.32	0.53	60.02	2.88
YFL011W	0.95	1.41	1.57	1.69	1.82	1.99	1.99	15.31	3.44	83.32	-0.23	98.63	3.21
YFL019C	0.93	1.38	1.53	1.63	1.76	1.94	1.91	16.83	3.74	85.00	-0.21	101.83	3.53
YGR296W	0.87	1.26	1.42	1.49	1.58	1.88	1.82	0.99	0.14	21.95	3.61	22.94	3.74
YNL176C	0.80	1.16	1.22	1.29	1.39	1.71	1.64	1.60	0.36	16.45	3.68	18.05	4.04
YIL156W	0.91	1.25	1.37	1.44	1.54	1.90	1.79	0.73	0.41	16.00	3.77	16.73	4.18
YER083C	0.92	1.21	1.38	1.56	1.68	1.86	1.84	21.10	4.18	19.67	0.11	40.77	4.29
YAL044W-A	0.90	1.48	1.60	1.64	1.85	2.02	2.00	2.51	0.49	30.77	4.24	33.27	4.73
YER072W	0.96	1.49	1.65	1.75	1.90	2.06	2.05	16.69	4.12	24.43	0.66	41.12	4.78
YOR113W	0.95	1.38	1.51	1.52	1.64	1.92	1.83	2.04	0.43	29.01	5.17	31.04	5.59
YGL087C	0.87	1.27	1.41	1.45	1.59	1.89	1.81	1.16	0.83	23.12	5.27	24.28	6.10
YMR171C	1.02	1.50	1.64	1.75	1.82	1.93	2.08	2.57	0.20	24.62	5.91	27.19	6.11
YDR386W	0.96	1.40	1.55	1.68	1.82	1.98	1.97	19.46	5.99	29.03	0.40	48.49	6.40
YPL084W	0.94	1.39	1.56	1.57	1.66	1.92	1.89	0.33	-0.07	27.70	6.47	28.03	6.40
YNL318C	0.98	1.56	1.71	1.73	1.84	2.09	2.03	4.34	0.26	46.64	6.53	50.98	6.79
YLR027C	0.90	1.36	1.54	1.58	1.74	1.98	1.92	1.83	0.50	34.90	6.32	36.73	6.82
YPL096C-A	1.14	1.54	1.81	1.95	2.12	2.30	2.36	2.06	-0.04	29.98	7.46	32.04	7.42
YGR040W	0.93	1.41	1.55	1.57	1.70	2.00	1.93	2.58	0.52	32.62	7.46	35.19	7.98
YMR029C	0.94	1.58	1.75	1.79	1.87	2.13	2.06	2.90	0.12	45.00	7.88	47.90	8.01
YLL039C	0.87	1.15	1.30	1.28	1.33	1.65	1.47	1.00	0.31	36.67	7.76	37.67	8.07
YBR299W	0.86	1.33	1.62	1.57	1.69	2.00	2.02	1.46	0.12	28.01	7.99	29.47	8.11
YLR413W	0.91	1.33	1.51	1.60	1.77	2.01	1.96	1.37	0.61	29.59	8.73	30.96	9.34
YIL055C	0.90	1.40	1.52	1.57	1.67	1.95	1.87	3.49	0.68	36.77	8.83	40.26	9.51
YJR044C	0.95	1.47	1.60	1.63	1.74	2.00	1.96	3.45	0.59	34.10	9.17	37.55	9.75
YJL020C	0.89	1.36	1.53	1.57	1.67	2.09	1.88	2.78	0.25	42.95	10.14	45.73	10.39
YPR061C	0.96	1.58	1.62	1.78	1.87	2.11	2.08	6.43	-0.01	43.43	10.77	49.86	10.76
YEL012W	0.93	1.38	1.51	1.58	1.72	1.90	1.89	10.03	1.07	38.23	10.05	48.27	11.13
YLR095C	1.01	1.51	1.66	1.76	1.85	2.11	2.12	3.36	0.39	31.74	10.83	35.10	11.22
YPL203W	0.89	1.39	1.40	1.54	1.68	1.78	1.82	2.68	0.49	31.08	10.80	33.76	11.28
YGR206W	1.07	1.66	1.80	1.85	1.96	2.19	2.18	2.93	0.63	35.44	11.00	38.38	11.63
YDR320C	0.91	1.37	1.49	1.64	1.74	2.00	2.01	2.78	0.37	40.32	11.61	43.10	11.98
YKL213C	0.93	1.43	1.55	1.59	1.71	2.00	1.92	4.97	0.39	39.48	11.71	44.45	12.10
YIL035C	0.94	1.46	1.63	1.65	1.75	1.91	1.96	1.83	0.28	38.93	12.01	40.76	12.29
YNL084C	0.96	1.16	1.33	1.33	1.36	1.61	1.51	5.60	0.50	46.83	11.97	52.43	12.47
YNL219C	0.88	1.28	1.42	1.52	1.67	1.89	1.85	6.91	0.59	40.89	12.00	47.80	12.58
YGR112W	0.94	1.33	1.46	1.48	1.65	1.92	1.83	3.70	0.59	35.66	12.22	39.36	12.82
YLR417W	0.87	1.16	1.28	1.29	1.39	1.60	1.55	2.85	0.59	53.23	12.27	56.08	12.85
YGL019W	0.88	1.27	1.43	1.47	1.59	1.83	1.79	3.70	0.42	45.33	12.60	49.03	13.03
YNL127W	0.86	1.11	1.27	1.28	1.41	1.70	1.67	7.11	0.19	48.79	12.94	55.90	13.12
YGR080W	1.20	1.78	1.91	1.98	2.06	2.28	2.27	4.39	0.55	44.45	12.65	48.85	13.19
YMR254C	0.94	1.34	1.47	1.53	1.62	1.91	1.84	3.62	0.38	40.59	12.83	44.21	13.22
YPR058W	0.93	1.57	1.69	1.74	1.83	2.09	2.04	7.59	0.05	48.07	13.26	55.65	13.31
YMR030W	0.94	1.44	1.61	1.66	1.78	2.06	1.96	3.95	0.48	41.84	12.86	45.79	13.33
YKL062W	1.02	1.56	1.73	1.78	1.89	2.11	2.06	3.91	0.44	39.15	12.92	43.06	13.36
YGR132C	0.99	1.66	1.80	1.83	1.91	2.15	2.10	4.21	0.52	43.26	13.19	47.47	13.72
YIL015W	0.85	1.16	1.25	1.26	1.37	1.70	1.57	4.10	0.72	42.09	13.00	46.20	13.72
YIL085C	0.90	1.19	1.34	1.49	1.59	1.91	1.79	3.98	0.21	46.22	13.55	50.20	13.76
YNL085W	0.84	1.21	1.32	1.37	1.49	1.84	1.76	2.78	0.88	24.54	13.00	27.32	13.87
YER145C	0.95	1.20	1.34	1.46	1.59	1.76	1.73	14.11	1.79	76.01	12.58	90.12	14.38
YPL027W	0.94	1.38	1.52	1.70	1.80	1.96	1.96	4.46	0.61	31.29	13.79	35.75	14.39
YAL059W	0.92	1.32	1.45	1.78	1.87	1.96	1.97	3.85	0.12	49.17	14.31	53.02	14.44
YLR238W	0.95	1.44	1.59	1.65	1.73	2.02	1.96	6.99	0.42	42.21	14.02	49.20	14.44
YKR066C	0.94	1.43	1.60	1.69	1.81	2.02	2.04	5.53	1.16	38.08	13.49	43.61	14.66
YJL062W	0.92	1.32	1.57	1.64	1.77	2.06	1.99	5.81	0.59	50.30	14.12	56.11	14.71
YDR377W	0.86	1.11	1.30	1.42	1.54	1.81	1.80	6.17	0.23	46.45	14.52	52.62	14.75
YOL129W	0.97	1.44	1.58	1.59	1.68	1.92	1.85	4.90	0.59	52.04	14.29	56.94	14.88
YNL078W	0.91	1.42	1.60	1.63	1.71	1.98	1.92	6.48	0.25	58.65	14.67	65.13	14.92
YKL003C	0.90	1.36	1.49	1.59	1.74	2.00	1.99	3.47	0.48	36.01	13.49	39.48	14.96
YGL082W	0.91	1.43	1.56	1.60	1.72	1.99	1.92	6.23	0.87	45.51	14.14	51.74	15.01
YDR255C	0.90	1.42	1.55	1.68	1.78	2.03	2.06	4.46	0.52	44.38	14.65	48.84	15.16
YKR088C	0.95	1.37	1.55	1.61	1.71	2.04	2.02	3.76	0.51	30.67	15.02	34.42	15.52
YER174C	0.94	1.49	1.65	1.71	1.83	2.10	2.04	6.11	0.48	60.42	15.07	66.53	15.55
YPR071W	0.89	1.37	1.43	1.59	1.67	1.77	1.89	3.46	0.39	43.74	15.16	47.19	15.56
YGR070W	0.94	1.57	1.75	1.78	1.88	2.14	2.08	5.30	0.77	41.63	14.96	46.92	15.73
YER137C	0.94	1.41	1.55	1.62	1.74	1.94	1.89	17.45	1.72	95.41	14.10	112.86	15.82
YDR171W	0.91	1.38	1.55	1.66	1.80	1.99	1.99	3.59	0.59	46.25	15.25	49.84	15.84
YNL032W	0.87	1.19	1.36	1.41	1.52	1.82	1.70	4.28	0.77	51.47	15.13	55.76	15.90
YHL008C	0.91	1.32	1.48	1.52	1.70	1.90	1.88	6.61	0.19	43.15	15.75	49.76	15.93
YBL024W	0.84	1.08	1.20	1.25	1.45	1.65	1.63	5.53	0.65	41.76	15.51	47.30	16.17
YDR388W	0.97	1.43	1.61	1.65	1.79	1.96	1.95	10.47	0.97	23.57	15.22	34.04	16.19
YMR265C	0.85	1.07	1.25	1.31	1.40	1.74	1.71	4.33	0.40	39.19	15.81	43.52	16.21
YGR105W	0.95	1.48	1.63	1.64	1.76	2.04	1.95	4.81	0.90	39.42	15.43	44.23	16.33
YDR516C	0.91	1.46	1.64	1.72	1.84	2.11	2.06	6.21	1.11	47.79	15.24	54.00	16.35
YEL007W	0.90	1.34	1.49	1.56	1.69	1.98	1.91	4.68	1.05	45.80	15.32	50.48	16.38
YMR255W	0.83	1.18	1.28	1.34	1.42	1.74	1.67	4.02	0.55	36.32	16.28	40.34	16.83
YGR155W	0.93	1.31	1.47	1.59	1.68	1.92	1.91	6.20	0.62	52.27	16.54	58.48	17.16
YGL208W	0.92	1.45	1.59	1.66	1.77	2.03	1.98	5.12	0.62	37.69	16.56	42.81	17.18
YJL053W	0.97	1.42	1.58	1.67	1.77	2.00	1.96	5.47	0.78	37.26	16.52	42.73	17.30
YNL255C	0.94	1.43	1.60	1.64	1.73	1.98	1.93	4.69	0.48	50.15	16.84	54.83	17.32
YKR011C	0.95	1.34	1.52	1.59	1.68	1.98	1.93	7.52	0.52	45.16	16.86	52.67	17.38
YJR102C	0.91	1.34	1.46	1.35	1.45	1.70	1.63	3.19	0.98	44.53	16.52	47.72	17.50
YPL119C	0.91	1.41	1.53	1.61	1.72	1.99	1.92	3.30	0.10	37.82	17.56	41.12	17.66
YLR149C	0.92	1.30	1.40	1.48	1.57	1.87	1.80	6.53	0.92	44.32	16.86	50.85	17.78
YPR069C	1.12	1.71	1.83	1.90	1.95	2.15	2.19	4.26	0.59	47.01	17.22	51.27	17.81
YLL038C	0.98	1.50	1.74	1.76	1.85	2.14	2.12	7.18	0.62	41.45	17.30	48.63	17.92
YGL064C	0.92	1.48	1.63	1.70	1.80	2.09	2.02	5.48	0.70	41.90	17.24	47.37	17.94
YKL120W	1.03	1.54	1.67	1.79	1.89	2.10	2.09	3.97	1.67	38.91	16.29	42.88	17.96
YNL229C	0.90	1.23	1.45	1.52	1.61	1.85	1.87	7.15	0.65	41.49	17.39	48.64	18.04
YEL011W	0.92	1.42	1.61	1.68	1.76	2.01	1.96	5.72	0.75	47.65	17.47	53.37	18.22
YNL265C	0.89	1.24	1.38	1.46	1.56	1.78	1.74	7.04	0.83	53.89	17.45	60.93	18.28
YIL010W	0.88	1.40	1.54	1.58	1.69	1.95	1.89	4.89	1.22	39.64	17.07	44.53	18.29
YOR214C	0.88	1.25	1.41	1.40	1.48	1.79	1.69	6.21	0.71	54.67	17.70	60.88	18.41
YNL135C	0.93	1.26	1.45	1.53	1.62	1.91	1.86	6.01	0.50	47.02	17.92	53.02	18.42
YIL017C	0.88	1.28	1.40	1.43	1.55	1.85	1.76	5.25	1.15	39.03	17.28	44.28	18.43
YGL016W	0.82	1.38	1.54	1.55	1.67	1.98	1.89	4.81	0.50	52.74	17.93	57.55	18.44
YGR231C	0.96	1.39	1.51	1.54	1.62	1.97	1.91	4.69	0.90	43.40	17.55	48.09	18.45
YOR358W	1.07	1.62	1.78	1.82	1.93	2.15	2.12	4.18	0.75	48.76	17.79	52.94	18.53
YNL157W	0.92	1.33	1.44	1.53	1.69	1.91	1.88	5.85	0.73	45.89	17.83	51.74	18.56
YKL070W	1.02	1.60	1.77	1.88	1.97	2.18	2.17	4.43	1.75	37.94	16.84	42.37	18.59
YPR114W	0.93	1.32	1.44	1.52	1.62	1.89	1.85	7.98	0.42	45.17	18.24	53.16	18.66
YKL101W	0.91	1.26	1.40	1.47	1.58	1.88	1.82	7.22	1.86	47.87	16.92	55.09	18.78
YPR164W	0.89	1.03	1.14	1.26	1.32	1.61	1.56	7.84	0.29	57.37	18.62	65.21	18.91
YPR063C	0.93	1.62	1.67	1.82	1.90	2.18	2.05	3.71	0.54	46.40	18.38	50.12	18.92
YBR114W	1.06	1.72	1.89	1.97	2.08	2.26	2.25	7.16	0.09	66.34	19.08	73.50	19.17
YER144C	1.00	1.55	1.70	1.80	1.94	2.10	2.09	17.92	1.94	98.90	17.26	116.82	19.20
YNL054W	0.87	1.26	1.36	1.46	1.55	1.90	1.82	5.41	1.16	30.96	18.12	36.37	19.28
YKR061W	0.94	1.33	1.48	1.55	1.66	1.92	1.88	6.52	0.55	42.89	18.74	49.41	19.29
YDR423C	0.92	1.31	1.45	1.50	1.60	1.89	1.83	7.29	0.89	48.40	18.50	55.69	19.39
YJR125C	0.90	1.28	1.39	1.43	1.54	1.82	1.73	6.11	1.92	47.48	17.51	53.59	19.43
YGR263C	1.03	1.70	1.82	1.92	1.99	2.19	2.21	5.68	1.07	48.53	18.54	54.21	19.62

ORF	Optical density at 600 nm at time intervals (h)							GLUCOSE		FRUCTOSE		TOTAL sugars	
	0	20	27	44	67	93	113	120 h	146 h	120 h	146 h	120 h	156 h
YPL138C	0.86	1.32	1.42	1.47	1.57	1.66	1.74	5.82	0.45	29.74	19.20	35.56	19.66
YER089C	0.88	1.28	1.44	1.52	1.65	1.84	1.81	16.92	2.17	36.69	17.64	53.61	19.81
YBL003C	0.89	1.23	1.32	1.31	1.48	1.68	1.62	6.18	0.84	37.69	19.03	43.87	19.87
YGR178C	0.91	1.22	1.41	1.41	1.53	1.93	1.71	7.07	1.00	65.34	18.88	72.41	19.88
YLR090W	0.94	1.31	1.47	1.55	1.63	1.93	1.89	7.01	0.53	47.81	19.35	54.82	19.88
YGR007W	1.00	1.52	1.66	1.68	1.78	2.06	2.01	5.61	1.03	45.64	18.97	51.26	20.00
YNL141W	0.89	1.30	1.43	1.53	1.61	1.87	1.86	8.29	0.79	52.76	19.29	61.05	20.08
YPL260W	0.93	1.38	1.48	1.54	1.64	1.92	1.78	11.79	0.59	46.12	19.53	57.91	20.12
YHL029C	0.88	1.17	1.29	1.36	1.46	1.70	1.67	6.02	0.92	44.61	19.22	50.63	20.14
YPL098C	0.96	1.43	1.57	1.72	1.81	2.04	2.02	6.51	1.02	40.81	19.18	47.32	20.20
YGR168C	0.99	1.49	1.61	1.63	1.76	2.04	1.98	6.11	1.03	46.17	19.24	52.28	20.27
YHR032W	0.89	1.26	1.39	1.56	1.66	1.99	1.93	7.93	0.42	59.73	19.85	67.65	20.27
YMR232W	0.90	1.34	1.52	1.62	1.72	1.99	1.97	5.82	0.50	41.35	19.88	47.17	20.38
YDR385W	0.88	1.16	1.34	1.45	1.61	1.82	1.80	15.60	2.87	29.73	17.51	45.33	20.39
YGR017W	0.96	1.42	1.56	1.59	1.70	1.98	1.93	5.23	1.14	41.00	19.32	46.23	20.46
YNL024C	0.87	1.21	1.30	1.27	1.34	1.68	1.57	8.44	1.58	46.34	18.97	54.78	20.55
YDR438W	0.95	1.49	1.67	1.76	1.87	2.11	2.08	7.52	0.97	54.28	19.60	61.80	20.57
YGL027C	0.91	1.32	1.48	1.54	1.65	1.85	1.80	9.29	0.90	69.84	19.75	79.13	20.65
YGR068C	1.00	1.49	1.66	1.73	1.82	2.10	2.05	7.30	1.05	57.58	19.66	64.88	20.71
YNL134C	0.94	1.35	1.54	1.66	1.76	1.99	1.99	12.46	0.75	60.42	19.97	72.88	20.71
YGR004W	1.01	1.62	1.75	1.76	1.86	2.13	2.08	6.85	0.74	53.11	20.04	59.96	20.78
YBR204C	0.89	1.31	1.42	1.51	1.61	1.84	1.83	7.55	0.89	53.22	19.91	60.76	20.80
YGR232W	1.01	1.65	1.80	1.85	1.98	2.17	2.19	7.44	1.24	47.40	19.64	54.84	20.88
YOL098C	0.94	1.52	1.70	1.72	1.80	2.07	2.01	6.94	0.67	56.45	20.23	63.38	20.90
YLR452C	0.88	1.34	1.52	1.67	1.82	2.05	2.03	5.91	0.92	54.42	20.02	60.33	20.94
YER183C	0.93	1.48	1.65	1.71	1.83	2.11	2.03	8.30	0.84	60.01	20.12	68.31	20.96
YKL071W	0.94	1.48	1.65	1.74	1.87	2.09	2.06	5.30	1.76	41.39	19.30	46.69	21.06
YJR103W	0.93	1.28	1.37	1.37	1.46	1.76	1.64	7.94	1.78	51.79	19.30	59.73	21.08
YDL227C	0.91	1.37	1.53	1.61	1.71	2.00	2.03	8.49	0.68	56.29	20.43	64.78	21.11
YMR304W	0.84	1.13	1.27	1.29	1.35	1.68	1.58	6.80	1.20	39.79	19.97	46.59	21.17
YNL190W	0.85	1.18	1.29	1.32	1.43	1.76	1.65	6.76	0.79	50.04	20.38	56.80	21.17
YJR100C	0.91	1.45	1.60	1.67	1.78	1.99	1.97	5.74	1.73	47.67	19.49	53.41	21.22
YGR162W	1.06	1.50	1.72	1.85	2.00	2.25	2.24	5.87	0.92	46.77	20.42	52.64	21.34
YHR155W	0.85	1.22	1.36	1.38	1.49	1.79	1.70	5.55	1.38	42.91	19.98	48.46	21.36
YIL076W	0.92	1.30	1.45	1.51	1.62	1.88	1.84	4.55	1.07	37.59	20.29	42.14	21.37
YGR015C	1.01	1.65	1.82	1.88	1.98	2.25	2.21	6.28	1.07	51.10	20.34	57.38	21.41
YGR237C	0.92	1.33	1.47	1.50	1.56	1.90	1.78	7.92	1.06	52.96	20.42	60.88	21.48
YGR096W	1.00	1.49	1.62	1.65	1.77	2.01	1.96	6.06	0.99	42.37	20.55	48.42	21.53
YPR070W	0.91	1.26	1.28	1.43	1.51	1.60	1.65	4.69	0.61	46.58	20.96	51.27	21.57
YEL017C-A	0.94	1.43	1.58	1.66	1.80	1.98	1.96	16.09	2.49	38.15	19.11	54.25	21.60
YNL311C	0.92	1.37	1.56	1.59	1.72	1.95	1.90	8.37	0.89	68.63	20.74	77.00	21.63
YDR375C	0.94	1.38	1.58	1.64	1.75	2.03	1.98	6.47	0.73	56.00	20.90	62.47	21.63
YGL139W	0.85	1.28	1.43	1.49	1.65	1.95	1.88	3.06	1.19	35.74	20.48	38.79	21.67
YNL146W	0.84	1.20	1.36	1.41	1.49	1.79	1.73	5.38	1.85	39.69	19.82	45.07	21.67
YLR150W	0.91	1.39	1.54	1.65	1.74	2.03	1.97	6.96	1.08	42.97	20.61	49.93	21.69
YGR180C	1.04	1.70	1.83	1.92	2.01	2.19	2.17	5.94	1.30	43.22	20.42	49.17	21.72
YKL117W	0.94	1.37	1.53	1.63	1.74	2.00	1.96	6.56	1.58	49.19	20.15	55.75	21.72
YNL183C	0.92	1.30	1.50	1.51	1.60	1.91	1.84	7.82	1.10	53.45	20.70	61.27	21.80
YGR021W	1.02	1.61	1.78	1.85	1.96	2.18	2.17	7.15	1.26	55.43	20.59	62.58	21.85
YPL046C	0.91	1.31	1.39	1.54	1.65	1.87	1.85	6.93	1.18	40.10	20.70	47.03	21.88
YJR097W	0.95	1.38	1.56	1.66	1.79	2.00	1.98	7.74	1.81	49.66	20.17	57.40	21.98
YGL211W	0.91	1.35	1.50	1.56	1.70	1.99	1.93	4.85	1.26	42.19	20.84	47.04	22.10
YER150W	0.95	1.48	1.63	1.74	1.88	2.05	2.03	16.74	2.11	92.25	20.04	108.99	22.15
YBL028C	0.87	1.31	1.63	1.41	1.62	1.83	1.80	7.44	1.53	48.12	20.67	55.56	22.20
YDR378C	0.97	1.57	1.76	1.83	1.93	2.17	2.15	7.02	0.84	57.44	21.39	64.46	22.23
YIL007C	0.90	1.26	1.38	1.44	1.53	1.75	1.73	5.85	1.51	39.99	20.78	45.84	22.29
YNL051W	0.93	1.30	1.42	1.43	1.50	1.81	1.71	6.26	1.17	52.55	21.16	58.80	22.33
YJR148W	0.90	1.31	1.42	1.45	1.57	1.85	1.76	8.83	2.29	53.95	20.04	62.78	22.33
YIL044C	0.86	1.19	1.31	1.31	1.40	1.74	1.62	4.39	1.51	42.72	20.90	47.10	22.41
YGR221C	0.92	1.40	1.57	1.64	1.72	2.01	1.94	6.70	1.10	47.16	21.33	53.87	22.43
YKR101W	0.88	1.30	1.47	1.44	1.59	1.87	1.85	10.20	1.02	61.40	21.43	71.60	22.45
YNL146C-A	0.88	1.30	1.49	1.57	1.67	1.96	1.90	6.74	2.49	42.64	19.97	49.38	22.46
YER051W	0.88	1.25	1.40	1.49	1.61	1.84	1.81	9.08	1.05	50.48	21.46	59.55	22.51
YLR292C	0.88	1.12	1.21	1.25	1.30	1.55	1.49	7.47	0.81	47.48	21.78	54.95	22.59
YPL198W	0.95	1.46	1.58	1.64	1.74	2.03	1.90	10.90	0.96	44.97	21.64	55.86	22.60
YGR066C	1.03	1.75	1.88	1.89	1.99	2.19	2.15	6.68	1.34	54.20	21.26	60.89	22.60
YFR032C-A	0.94	1.34	1.50	1.59	1.70	2.00	1.93	7.51	1.03	51.28	21.58	58.79	22.61
YNL068C	0.88	1.33	1.52	1.59	1.69	2.02	1.94	6.28	1.37	37.55	21.37	43.83	22.74
YNL042W-B	0.88	1.29	1.48	1.57	1.67	1.97	1.93	5.96	1.05	41.49	21.69	47.44	22.75
YNL202W	0.85	1.21	1.40	1.46	1.55	1.84	1.83	5.92	1.21	40.16	21.61	46.08	22.81
YIL041W	0.88	1.25	1.44	1.72	1.72	1.79	1.75	4.71	1.41	45.10	21.43	49.81	22.84
YGR035W-A	0.90	1.35	1.59	1.69	1.80	2.05	2.02	6.63	0.13	47.71	22.72	54.34	22.85
YAL049C	0.91	1.03	1.20	1.51	1.65	1.99	1.95	8.82	1.26	53.27	21.61	62.09	22.87
YDL091C	0.92	1.47	1.61	1.75	1.87	2.03	2.08	6.25	0.84	57.13	22.06	63.38	22.91
YNL116W	0.89	1.20	1.32	1.40	1.52	1.73	1.71	9.64	1.18	51.66	21.75	61.29	22.93
YLR052W	0.91	1.24	1.35	1.42	1.54	1.84	1.78	8.53	1.61	47.83	21.34	56.35	22.95
YJR151W-A	0.90	1.33	1.44	1.50	1.61	1.88	1.79	8.31	2.32	47.87	20.67	56.18	22.99
YDR479C	0.84	1.25	1.44	1.55	1.67	1.97	1.91	6.41	0.93	50.19	22.08	56.60	23.01
YKL128C	0.96	1.40	1.49	1.57	1.68	1.95	1.88	7.44	1.87	50.17	21.16	57.60	23.03
YJR124C	0.95	1.30	1.38	1.38	1.47	1.76	1.64	8.85	1.90	54.07	21.16	62.92	23.05
YJR133W	1.02	1.62	1.78	1.87	1.96	2.17	2.16	6.06	1.62	44.49	21.43	50.56	23.06
YDL194W	0.92	1.34	1.55	1.66	1.76	2.02	2.01	7.98	0.70	59.19	22.37	67.17	23.07
YGR169C-A	0.94	1.31	1.47	1.56	1.65	1.89	1.86	6.63	1.13	43.07	21.96	49.70	23.09
YOR054C	0.87	1.36	1.56	1.65	1.77	2.03	1.97	8.33	1.01	65.53	22.11	73.86	23.11
YDR392W	0.96	1.40	1.53	1.61	1.75	1.93	1.91	15.54	2.24	44.26	20.88	59.79	23.12
YKL207W	0.91	1.39	1.54	1.58	1.67	1.96	1.90	8.19	1.15	49.52	22.02	57.71	23.17
YIL008W	0.86	1.18	1.31	1.40	1.51	1.76	1.72	4.55	1.50	39.58	21.75	44.13	23.24
YHR193C	0.89	1.23	1.35	1.35	1.46	1.77	1.64	8.13	1.75	50.46	21.54	58.59	23.28
YOR334W	0.92	1.36	1.44	1.59	1.67	1.95	1.91	6.81	1.48	38.33	21.81	45.13	23.29
YLR170C	0.98	1.49	1.66	1.75	1.84	2.08	2.05	8.53	0.45	45.80	22.95	54.33	23.41
YOR213C	0.94	1.37	1.55	1.59	1.70	1.96	1.91	6.50	0.78	51.43	22.70	57.93	23.47
YJR142W	0.94	1.40	1.58	1.66	1.77	2.00	1.99	9.22	2.52	50.28	20.97	59.51	23.49
YLL057C	0.89	1.24	1.38	1.44	1.51	1.84	1.74	9.97	1.11	50.56	22.43	60.53	23.53
YFL049W	0.92	1.40	1.56	1.62	1.72	2.03	1.94	6.90	1.00	50.50	22.55	57.40	23.55
YKR054C	0.88	1.24	1.38	1.44	1.60	1.90	1.83	6.09	1.31	43.73	22.25	49.82	23.56
YDR015C	0.88	1.31	1.44	1.54	1.64	1.88	1.86	9.44	1.25	57.91	22.31	67.35	23.56
YOR002W	0.98	1.40	1.55	1.58	1.70	1.93	1.88	8.28	1.04	61.52	22.57	69.79	23.61
YOR139C	1.00	1.40	1.54	1.58	1.69	1.91	1.88	8.85	1.07	65.36	22.57	74.21	23.64
YKL047W	0.87	1.24	1.33	1.38	1.49	1.81	1.69	7.89	2.05	52.96	21.60	60.85	23.65
YHR195W	0.92	1.37	1.51	1.54	1.66	1.93	1.85	6.97	1.52	52.31	22.15	59.28	23.67
YJR149W	0.93	1.40	1.49	1.54	1.65	1.92	1.83	8.11	2.27	52.39	21.52	60.50	23.79
YHR060W	0.89	1.21	1.39	1.57	1.68	1.99	1.96	6.66	1.22	48.25	22.57	54.91	23.80
YIR037W	0.95	1.46	1.60	1.62	1.73	2.02	2.01	8.61	1.25	51.10	22.55	59.72	23.80
YIL098C	0.90	1.31	1.45	1.53	1.60	1.88	1.83	7.70	1.93	47.92	21.87	55.62	23.80
YJR051W	1.01	1.35	1.51	1.49	1.57	1.87	1.70	7.80	1.09	56.15	22.72	63.95	23.80
YBR264C	0.99	1.63	1.78	1.90	1.99	2.15	2.18	5.19	0.56	41.26	23.31	46.44	23.86
YNL204C	0.88	1.34	1.48	1.59	1.73	1.91	1.89	7.80	1.35	41.87	22.51	49.67	23.87
YPL250C	0.92	1.30	1.31	1.43	1.52	1.58	1.64	7.53	1.25	47.17	22.75	54.70	24.00
YDR428C	0.98	1.52	1.71	1.79	1.88	2.12	2.11	7.42	1.05	52.99	22.97	60.42	24.02
YKL018C-A	0.98	1.45	1.59	1.65	1.74	1.97	1.92	7.23	2.22	50.03	21.81	57.26	24.03
YMR105W-A	1.03	1.51	1.68	1.77	1.87	2.10	2.08	7.83	1.22	47.96	22.84	55.79	24.06
YJL083W	0.90	1.26	1.45	1.46	1.56	1.86	1.75	6.87	0.88	55.61	23.22	62.48	24.10
YGL080W	0.92	1.60	1.77	1.80	1.90	2.14	2.09	5.12	1.03	49.39	23.10	54.51	24.12
YKR051W	0.87	1.19	1.28	1.30	1.45	1.70	1.63	10.64	1.18	55.55	22.95	66.19	24.13
YGR227W	0.88	1.21	1.34	1.39	1.52	1.69	1.69	6.02	0.87	49.64	23.29	55.66	24.16
YOR225W	0.97	1.65	1.80	1.82	1.91	2.14	2.09	8.82	0.87	66.57	23.35	75.39	24.22
YKL127W	0.95	1.42	1.60	1.69	1.82	2.05	2.02	5.28	2.15	41.76	22.08	47.05	24.24
YGL231C	0.87	1.47	1.61	1.64	1.74	2.01	1.93	8.79	1.08	52.33	23.18	61.12	24.26
YOR099W	0.89	1.14	1.41	1.53	1.65	1.99	1.88	7.77	1.60	62.41	22.74	70.18	24.34
YGL248W	0.91	1.44	1.57	1.65	1.76	2.02	1.96	5.91	1.08	48.33	23.26	54.24	24.35
YCL008C	0.93	1.33	1.53	1.56	1.75	1.99	1.95	6.74	0.01	67.42	24.36	74.16	24.36
YGR085C	1.01	1.45	1.60	1.66	1.77	2.01	1.95	7.92	1.30	56.11	23.10	64.04	24.39
YIR019C	1.00	1.57	1.74	1.83	1.92	2.14	2.10	6.18	1.10	49.04	23.31	55.22	24.41
YHL014C	0.88	1.27	1.42	1.46	1.69	1.85	1.82	7.57	1.63	39.53	22.81	47.10	24.44
YAL031C	0.89	1.31	1.45	1.44	1.67	1.87	1.86	7.81	1.69	40.02	22.75	47.83	24.44
YGR283C	1.01	1.47	1.61	1.69	1.73	2.03	1.95	7.31	1.33	50.52	23.12	57.83	24.44
YLR018C	0.96	1.45	1.62	1.72	1.80	2.03	2.02	6.61	0.98	41.88	23.48	48.49	24.47
YIL170W	0.90	1.24	1.37	1.43	1.49	1.82	1.76	7.19	1.62	50.52	22.86	57.71	24.48
YMR261C	0.85	1.20	1.33	1.37	1.44	1.78	1.68	7.54	2.04	46.48	22.51	54.02	24.55
YPL164C	0.92	1.38	1.49	1.55	1.65	1.96	1.80	6.25	0.84	43.04	23.71	49.30	24.55
YKL017C	1.03	1.60	1.77	1.87	1.97	2.18	2.18	5.41	2.07	42.33	22.51	47.74	24.57

Appendix 7. Data for histogram representing the distribution of deletants (WYDL_LN, Fig. 2).

Range	deletants
0-10	40
10-20	92
20-30	390
30-40	558
40-50	350
50-60	132
60-70	57
70-80	29
80-90	14
90-100	11
100-110	7
110-120	2
120-130	6
130-140	3
140-150	0
150-160	0
160-170	4
170-180	3
180-190	3
above 190	143

Residual sugar of wildtype 48 +/- 8 g L-1

1080 candidates (Residual sugar <40 g L^{-1} at time point C; 146 h)

482 candidates (Residual sugar 40-60 g L^{-1} at time point C; 146 h)

282 candidates (Residual sugar >60 g L^{-1} at time point C; 146 h)

Appendix 8. Shortlisted 92 deletants based on residual sugars (<48 g L^{-1} at 120 h and < 26 g L^{-1} at 144 h) of the micro-fermentation.

ORF	Gene name	Gene description	TOTAL sugars	
			120 hrs	146 hrs
YNL145W	MFA2	Mating Factor A	7.79	-0.27
YDR368W	YPR1	Yeast Putative Reductase	29.60	-0.11
YKL037W	AIM26	Altered Inheritance rate of Mitochondria	9.85	0.77
YDR486C	VPS60	Vacuolar Protein Sorting	41.58	1.27
YDR379W	RGA2	Rho GTPase Activating Protein	45.50	1.32
YDR383C	NKP1	Non-essential Kinetochore Protein	46.37	2.32
YGR296W	YRF1-3		22.94	3.74
YNL176C	TDA7	Topoisomerase I Damage Affected	18.05	4.04
YIL156W	UBP7	UBiquitin-specific Protease	16.73	4.18
YER083C	GET2	Guided Entry of Tail-anchored proteins	40.77	4.29
YAL044W-A	BOL1	BolA-like protein	33.27	4.73
YER072W	VTC1	Vacuolar Transporter Chaperone	41.12	4.78
YOR113W	AZF1	Asparagine-rich Zinc-Finger	31.04	5.59
YGL087C	MMS2	Methyl MethaneSulfonate sensitivity	24.28	6.10
YMR171C	ERI1	Endosomal Adaptor of Rsp5p	27.19	6.11
YPL084W	BRO1	BCK1-like Resistance to Osmotic shock	28.03	6.40
YLR027C	AAT2	Aspartate AminoTransferase	36.73	6.82
YPL096C-A	ERI1	ER-associated Ras Inhibitor	32.04	7.42
YGR040W	KSS1	Kinase Suppressor of Sst2 mutations	35.19	7.98
YMR029C	FAR8	Factor ARrest	47.90	8.01
YLL039C	UBI4	Ubiquitin	37.67	8.07
YBR299W	MAL32	MALtose	29.47	8.11
YLR413W	INA1	INdicator of Abscission	30.96	9.34
YIL055C			40.26	9.51
YJR044C	VPS55	Vacuolar Protein Sorting	37.55	9.75
YJL020C	BBC1	Bni1 synthetic lethal and Bee1 (las17) Complex member	45.73	10.39
YLR095C	IOC2	Iswi One Complex	35.10	11.22
YPL203W	TPK2	Takashi's Protein Kinase	33.76	11.28
YGR206W	MVB12	MultiVesicular Body sorting factor of 12 kilodaltons	38.38	11.63
YDR320C	SWA2	Synthetic lethal With Arf1	43.10	11.98
YKL213C	DOA1	Degradation Of Alpha	44.45	12.10
YIL035C	CKA1	Casein Kinase Alpha subunit	40.76	12.29
YNL219C	ALG9	Asparagine-Linked Glycosylation	47.80	12.58
YGR112W	SHY1	SURF Homolog of Yeast	39.36	12.82
YMR254C			44.21	13.22
YMR030W	RSF1	ReSpiration Factor	45.79	13.33
YKL062W	MSN4	Multicopy suppressor of SNF1 mutation	43.06	13.36
YGR132C	PHB1	ProHiBitin	47.47	13.72
YIL015W	BAR1	BARrier to the alpha factor response	46.20	13.72
YNL085W	MKT1	Maintenance of K2 Killer Toxin	27.32	13.87
YPL027W	SMA1	Spore Membrane Assembly	35.75	14.39
YKR066C	CCP1	Cytochrome c Peroxidase	43.61	14.66
YKL003C	MRP17	Mitochondrial Ribosomal Protein	39.48	14.96
YKR088C	TVP38	Tlg2-Vesicle Protein	34.42	15.52
YPR071W			47.19	15.56
YGR070W	ROM1	RhO1 Multicopy suppressor	46.92	15.73
YBL024W	NCL1	NuCLear protein	47.30	16.17
YDR388W	RVS167	Reduced Viability on Starvation	34.04	16.19
YMR265C			43.52	16.21
YGR105W	VMA21	Vacuolar Membrane Atpase	44.23	16.33
YMR255W	GFD1	Good For Dbp5p	40.34	16.83
YGL208W	SIP2	SNF1-Interacting Protein	42.81	17.18
YJL053W	PEP8	carboxyPEPtidase Y-deficient	42.73	17.30
YJR102C	VPS25	Vacuolar Protein Sorting	47.72	17.50
YPL119C	DBP1	Dead Box Protein	41.12	17.66
YGL064C	MRH4	Mitochondrial RNA Helicase	47.37	17.94
YKL120W	OAC1	OxaloAcetate Carrier	42.88	17.96
YIL010W	DOT5	Disruptor Of Telomeric silencing	44.53	18.29
YIL017C	VID28	Vacuolar Import and Degradation	44.28	18.43
YKL070W			42.37	18.59
YNL054W	VAC7	VACuolar segregation	36.37	19.28
YPL138C	SPP1	Set1c, Phd finger Protein	35.56	19.66
YBL003C	HTA2	Histone h Two A	43.87	19.87
YPL098C	MGR2	Mitochondrial Genome Required	47.32	20.20
YMR232W	FUS2	cell FUSion	47.17	20.38
YDR385W	EFT2	Elongation Factor Two	45.33	20.39
YGR017W			46.23	20.46
YKL071W			46.69	21.06
YMR304W	UBP15	UBiquitin-specific Protease	46.59	21.17
YIL076W	SEC28	SECretory	42.14	21.37
YGL139W	FLC3	FLavin Carrier	38.79	21.67
YNL146W			45.07	21.67
YPL046C	ELC1	ELongin C	47.03	21.88
YGL211W	NCS6	Needs Cla4 to Survive	47.04	22.10
YIL007C	NAS2	Non-ATPase Subunit	45.84	22.29
YIL044C	AGE2	ArfGAP Effector	47.10	22.41
YNL068C	FKH2	ForK head Homolog	43.83	22.74
YNL042W-B			47.44	22.75
YNL202W	SPS19	SPorulation-Specific	46.08	22.81
YIL008W	URM1	Ubiquitin Related Modifier	44.13	23.24
YOR334W	MRS2	Mitochondrial RNA Splicing	45.13	23.29
YBR264C	YPT10	Yeast Protein Two	46.44	23.86
YKL127W	PGM1	PhosphoGlucoMutase	47.05	24.24
YHL014C	YLF2		47.10	24.44
YAL031C	GIP4	Glc7 Interacting Protein	47.83	24.44
YKL017C	HCS1	dna HeliCaSe	47.74	24.57
YNL056W	OCA2	Oxidant-induced Cell cycle Arrest	43.71	25.06
YHR157W	REC104	RECombination	47.70	25.17
YKL124W	SSH4	Suppressor of SHr3 deletion	41.06	25.17
YMR233W	TRI1		47.47	25.60
YNL050C			47.29	25.69
YBR268W	MRPL37	Mitochondrial Ribosomal Protein, Large subunit	43.59	25.73

ORF – Open reading frame

Appendix 9. Shortlisted 30 candidates based on AUC and fermentation duration of 92 shortlisted strains when compared to the wildtype

	Deletants progress during fermentation (residual sugar at different sampling time points)											
Deletants	24 h	49 h	71 h	95 h	107 h	119 h	131 h	151 h	181 h	205 h	AUC	AUC % of parent
YKL120W	87.99	76.62	55.42	39.23	36.82	28.94	21.82	6.15	7.04	1.29	9516	95
YMR029C	106.67	82.71	56.68	38.21	31.06	19.76	10.06	-0.36	-0.11		9493	95
YAL044W-A	101.77	73.82	55.08	36.03	32.86	25.09	13.96	5.60	1.65		9408	94
YDR368W	105.77	92.96	51.01	31.66	28.16	5.77	5.50	1.36	-0.10		9348	93
YLL039C	106.92	84.86	47.10	32.57	27.33	20.64	10.97	3.06	0.97		9299	93
YDR320C	96.45	80.60	53.63	36.94	32.55	23.99	13.40	3.04	0.11		9298	93
YPL203W	101.75	73.26	51.17	35.44	31.43	23.73	13.50	5.49	1.40		9244	92
YKL062W	97.76	68.82	51.71	37.22	32.95	25.90	14.79	6.37	3.24	-0.01	9224	92
YKR088C	98.75	74.64	51.39	35.24	32.80	23.03	13.68	5.29	1.05		9201	92
YDR486C	99.49	69.99	53.06	33.43	32.34	29.37	14.91	3.79	0.45		9153	92
YGR112W	98.30	72.31	49.92	35.37	30.73	23.98	13.86	5.33	2.37	-0.11	9129	91
YBL024W	100.33	73.07	51.11	33.73	31.29	22.76	12.06	4.69	1.20		9110	91
YMR171C	99.38	72.14	50.36	33.69	30.81	21.73	12.49	4.42	0.23		9006	90
YMR030W	94.80	64.80	53.56	35.95	33.64	25.02	15.38	3.33	0.30		8929	89
YNL085W	101.25	76.11	50.21	32.90	27.77	17.95	8.74	0.69			8888	89
YLR027C	98.44	74.83	51.52	32.46	27.09	20.10	9.84	2.05	-0.11		8882	89
YIL035C	92.45	80.65	49.52	32.82	28.56	20.83	11.02	1.66	-0.14		8868	89
YKR066C	84.44	75.15	51.88	34.09	31.31	24.97	15.58	2.59	0.65		8812	88
YGR040W	88.03	71.67	49.86	36.10	30.76	23.84	14.70	2.41	0.10		8756	88
YLR413W	103.93	77.06	49.02	29.20	23.74	14.94	5.77	-0.75			8743	87
YGR206W	99.18	74.09	50.33	30.74	26.00	17.44	7.27	0.63			8702	87
YPL027W	97.11	71.81	48.30	31.53	26.50	16.82	7.70	0.38			8562	86
YKL003C	97.71	70.87	46.70	29.75	26.47	17.21	8.25	1.23	-0.14		8522	85
YPL084W	100.97	73.42	48.34	27.28	21.36	12.63	4.49	-0.60			8456	85
YGL087C	100.56	71.27	45.32	25.37	21.05	11.52	2.77	-0.76			8248	82
YKL037W	100.97	72.59	45.08	22.30	14.73	6.22	-0.27				8057	81
YJL020C	92.26	69.48	40.87	22.54	17.13	9.05	0.52				7746	77
YNL145W	97.44	74.02	40.43	17.46	8.29	5.52	-0.28				7725	77
YNL176C	91.89	62.39	36.11	16.19	11.11	5.32	-0.26				7228	72
YIL156W	82.79	65.17	35.89	19.15	14.63	7.03	-0.15				7185	72
	Parents progress during fermentation (residual sugar at different sampling time points)											
Time	24 h	49 h	71 h	95 h	107 h	119 h	131 h	151 h	181 h	205 h		
1	100.45	88.20	57.18	40.59	38.36	32.17	19.31	11.33	8.78	2.61	10486	
2	88.64	78.36	56.43	40.52	38.27	30.81	20.46	7.75	7.48	1.89	9798	
3	102.04	77.07	56.82	39.62	36.36	30.38	17.68	9.63	5.85	0.66	9993	
4	97.31	74.64	57.17	41.13	35.60	27.58	16.65	8.36	4.73	-0.04	9717	
Avg	97	80	57	40	37	30	19	9	7	1	9999	
SD	6	6	0	1	1	2	2	2	2	1	345	

Fermentation completion of the wildtype and deletant (residual sugars <2 g L^{-1})

Residual sugar of the deletants

Residual sugar of the wildtype

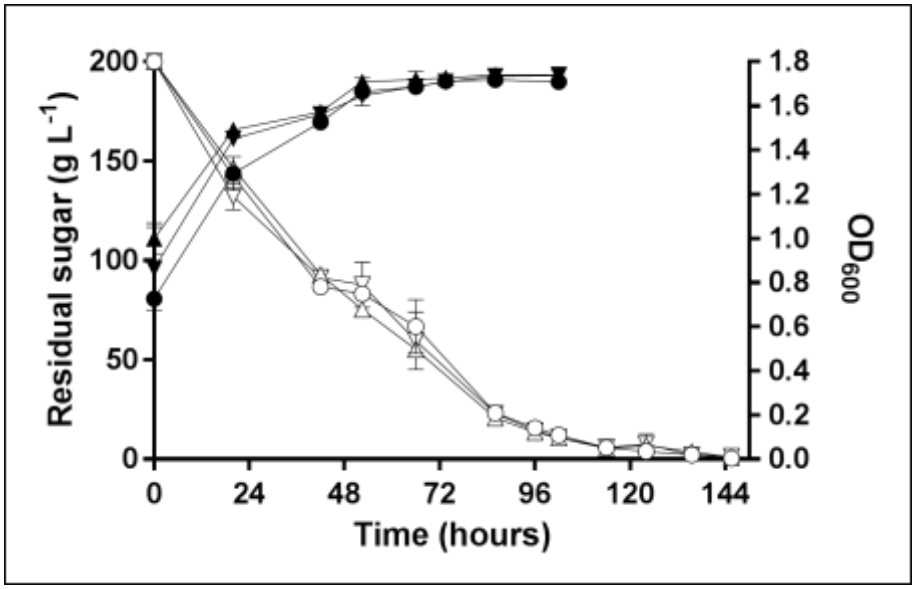
Area under the curve calculated using the fermentation curve

Appendix 10. Enrichment of fermentation efficient genes annotated to specific GO terms from SGD using GO ToolBox GO-stats.

GO_ID	TERM	P-VALUE	GENES_IN_SET
GO:0070647	protein modification by small protein conjugation or removal	3.65E-06	*UBP7,UBI4,BRO1,MMS2,UBC13*
GO:0032509	endosome transport via multivesicular body sorting pathway	4.45E-06	*MVB12,BRO1,EAR1*
GO:0000209	protein polyubiquitination	7.43E-06	*UBI4,MMS2,UBC13*
GO:0016579	protein deubiquitination	8.66E-06	*UBP7,UBI4,BRO1*
GO:0070646	protein modification by small protein removal	2.11E-05	*UBP7,UBI4,BRO1*
GO:0043328	protein targeting to vacuole during ubiquitin-dependent protein catabolic process via the MVB pathway	3.85E-05	*BRO1,EAR1*
GO:0019941	modification-dependent protein catabolic process	6.76E-05	*UBP7,BRO1,MMS2,EAR1,UBC13*
GO:0043632	modification-dependent macromolecule catabolic process	7.75E-05	*UBP7,BRO1,MMS2,EAR1,UBC13*
GO:0051603	proteolysis involved in cellular protein catabolic process	8.05E-05	*UBP7,BRO1,MMS2,EAR1,UBC13*
GO:0043687	post-translational protein modification	1.12E-04	*UBP7,TPK2,UBI4,BRO1,MMS2,UBC13*
GO:0016197	endosome transport	2.42E-04	*MVB12,BRO1,EAR1*
GO:0006623	protein targeting to vacuole	2.53E-04	*MVB12,BRO1,EAR1*
GO:0044257	cellular protein catabolic process	4.51E-04	*UBP7,BRO1,MMS2,EAR1,UBC13*
GO:0032511	late endosome to vacuole transport via multivesicular body sorting pathway	4.53E-04	*BRO1,EAR1*
GO:0016567	protein ubiquitination	5.61E-04	*UBI4,MMS2,UBC13*
GO:0006301	postreplication repair	5.75E-04	*MMS2,UBC13*
GO:0006513	protein monoubiquitination	6.42E-04	*UBI4,UBC13*
GO:0043162	ubiquitin-dependent protein catabolic process via the multivesicular body sorting pathway	7.12E-04	*BRO1,EAR1*
GO:0006508	proteolysis	8.96E-04	*UBP7,BRO1,MMS2,EAR1,UBC13*
GO:0032446	protein modification by small protein conjugation	1.01E-03	*UBI4,MMS2,UBC13*
GO:0044267	cellular protein metabolic process	1.03E-03	*UBP7,TPK2,UBI4,BRO1,MFA2,MMS2,MKT1,EAR1,UBC13,MRP17*
GO:0006464	protein modification process	1.41E-03	*UBP7,TPK2,UBI4,BRO1,MMS2,UBC13*

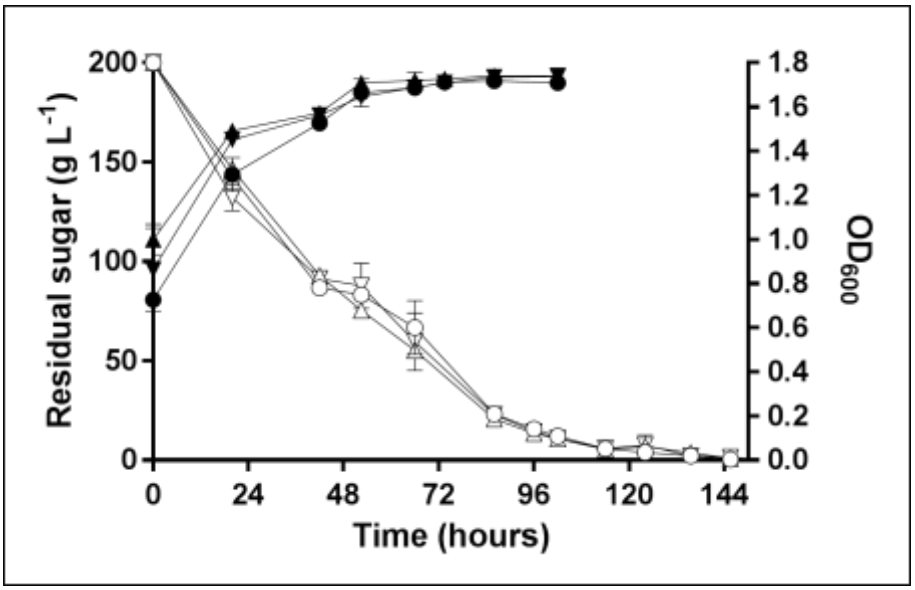
GO:0034962	cellular biopolymer catabolic process	1.89E-03	*UBP7,BRO1,MMS2,EAR1,UBC13*
GO:0007034	vacuolar transport	1.91E-03	*MVB12,BRO1,EAR1*
GO:0019538	protein metabolic process	2.00E-03	*UBP7,TPK2,UBI4,BRO1,MFA2,MMS2,MKT1,EAR1,UBC13,MRP17*
GO:0045324	late endosome to vacuole transport	2.30E-03	*BRO1,EAR1*
GO:0030163	protein catabolic process	2.54E-03	*UBP7,BRO1,MMS2,EAR1,UBC13*
GO:0044265	cellular macromolecule catabolic process	3.70E-03	*UBP7,BRO1,MMS2,EAR1,UBC13*
GO:0006531	aspartate metabolic process	4.08E-03	*AAT2*
GO:0006532	aspartate biosynthetic process	4.08E-03	*AAT2*
GO:0044248	cellular catabolic process	4.80E-03	*AIM26,UBP7,BRO1,MMS2,EAR1,UBC13*
GO:0006511	ubiquitin-dependent protein catabolic process	5.12E-03	*UBP7,BRO1,EAR1*
GO:0043412	biopolymer modification	6.41E-03	*UBP7,TPK2,UBI4,BRO1,MMS2,UBC13*
GO:0043285	biopolymer catabolic process	6.83E-03	*UBP7,BRO1,MMS2,EAR1,UBC13*
GO:0044419	interspecies interaction between organisms	8.14E-03	*MKT1*

Appendix 11. Fermentations of L2056 and homozygous and heterozygous *MFA2* deletants



Fermentations (100 mL) were conducted in triplicate in CDGJM with 75 mg N L^{-1}, sugar consumption was monitored enzymatically and reported as total sugars (open symbols). Growth was monitored as optical density (at 600 nm (solid symbols). Data points present mean values of triplicate data with standard deviation as error bars. Circle; L2056 square; L2056 *MFA2*/*mfa2*Δ, inverted triangle; L2056 *mfa2*Δ/*mfa2*Δ.

Appendix 12. Fermentations of *MFA2* deletants in C911A/C911D background during fermentation



Fermentations (100 mL) were conducted in triplicate in CDGJM with 75 mg N L^{-1}, sugar consumption was monitored enzymatically and reported as total sugars (open symbols). Growth was monitored as optical density at 600 nm (solid symbols). Data points present mean values of triplicate data with standard deviation as error. Circle; C911A/C911D, square; C911A *mfa2*Δ/C911D, upright triangle; C911A/C911D *mfa2*Δ, inverted triangle; C911A *mfa2*Δ/C911D *mfa2*Δ.

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