Glycopeptidase A (from Almond)

Code Number: 100676
Size: 10 mU/vial

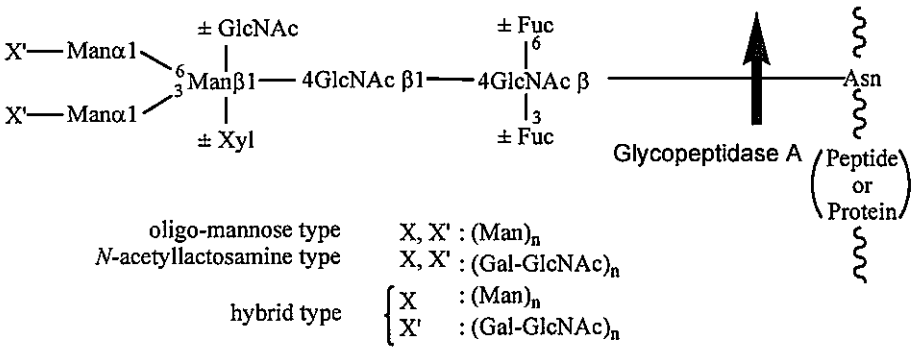
Source: Almond

Systematic Name: *N* - linked - glycopeptide - (*N* - acetyl - β - D - glycosaminyl) - L - asparagin amidohydrolase
Alternative Name: Almond – Glycopeptidase, PNGase A

EC Number: 3.5.1.52
CAS Number: 83534-39-8

Description: Glycopeptidase A, found in the sweet almond, hydrolyzes β - aspartylglycosylamine linkages in glycopeptides to yield equimolar amounts of oligosaccharide, peptide, and ammonia. The enzyme hydrolyzes quantitatively glycopeptides with more than two amino acid residues and various kinds of Asn - linked oligosaccharides [oligo - mannose type, hybrid type and *N* - acetyllactosamine type]. The asparagine residue involved in the linkage converts to an aspartyl residue concurrently with the removal of the oligosaccharide moiety. The enzyme is an excellent tool to isolate intact oligosaccharides for the structural analyses.

Reaction:



It acts neither on Asn - oligosaccharide nor on Asn - GlcNAc. The enzyme hydrolyzes intact glycoprotein and directly acts on the cell surface, though the rate of hydrolysis of the glycoproteins is slow.

Specifications:

Activity	**≥10**	mU/vial
Specific Activity	**≥500**	mU/mg protein
Contaminants	β-galactosidase	**≤1%**
Appearance	Lyophilized powder containing 10mM Citrate-phosphate buffer, pH5.0	
Stabilizer	BSA free	
Preservative	None	
Reconstitution	Dissolve the enzyme in 200µL of 0.1% BSA	
Optimum pH	4.0-6.0 (The activity is lost suddenly over pH7.0)	
Recommended Reaction Temperature	37°C	
Molecular Weight	66,800 – 79,500	
Inhibitors	Cu^{2+}, Fe^{2+}, Zn^{2+} (10mM)	
Km value	4mM toward Asn - Asn (Man_2, Xyl_1, Fuc_1, $GlcNAc_2$) - Glu - Ser - Ser.	
Stability	Stable at pH 4.0 - 6.0 and at 37°C for 3 days.	

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Unit Definition: One enzyme unit is defined as the amount of the enzyme required to hydrolyze 1μmole of ovalbumin glycopeptide, Glu - Glu (or Gln) - Lys - Tyr - Asn (Man_5, $GlcNAc_3$) - Leu - Thr - Ser - Val, at pH 5.0 and at 37°C per minute.

Assay for Enzyme Activity:

Method:		
[Reaction mixture]		
Substrate and Buffer solution:	Samples containing glycopeptides (0.1μmole) in 0.1M Citrate phosphate buffer, pH 5.0	20μL
Enzyme solution:	Suitably diluted enzyme (0.1-1mU) with 0.1% BSA	5μL
Total volume		25μL
[Procedure]		
Reaction: The reaction mixture is incubated for 5–16 hours at 37°C.		

Application:

- Structural analysis of *N*-linked glycoproteins
- Functional studies of *N*-linked glycoproteins
- Mechanism of biosynthesis pathways

Storage: Store at -20°C until opened. Following reconstitution, aliquot and freeze (-20°C).

References:

A) Purification and characterization of the enzyme

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B) Structural studies of the oligosaccharides

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C) Removal of sugars from intact glycoproteins

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Note: For *in vitro* research use only, not for diagnostic or therapeutic use. This product is not medical device.