Active Recombinant Streptococcus pneumoniae β-N-acetylglucosaminidase

Cat. No. β-N-acetylglucosaminidase-009S **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Recombinant β-N-acetylglucosaminidase from Streptococcus pneumoniae expressed in E. Coli.
Species	Streptococcus pneumoniae
Source	E. coli
Description	N-acetylglucosaminidase cleaves all non-reducing terminal β-linked N-acetylglucosamine residues from complex carbohydrates and glycoproteins. The cleavage rates of different linkages of GlcNAc on bi-, tri- and tetraantennary oligosaccharides is greatly dependent on the steric hindrance by neighbouring residues. The β(1-2)GlcNAc residue linked to the β(1-3)-linked mannose is cleaved at the highest rate and the β(1-2) GlcNAc residue linked to the β(1-6)-linked mannose at the lowest rate for all three oligosaccharides. The β(1-6) GlcNAc residue, when present, is removed at the second highest rate and the β(1-4) GlcNAc, third. On a triantennary structure, this residue is removed at the second highest rate. A bisecting β(1-4) GlcNAc linked to the β-linked mannose severely hinders cleavage of other GlcNAc residues–high concentrations of enzymes and prolonged incubation times are required for cleavage.
Form	Sterile-filtered solution
EC	3.2.1.52

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Specificity	Cleaves all non-reducing terminal β-linked N-acetylglucosamine. Bisecting GlcNAc slows the reaction.
Contents	N-acetylglucosaminidase in 20 mM Tris-HCl, 25 mM NaCl, pH 7.5 5× Reaction Buffer 250 mM sodium phosphate, pH 5.0
Bio-activity	Activity: > 50 U/mL Specific Activity: > 80 U/mg Defined as the amount of enzyme req uired to produce 1 µmole of p-nitrophenol (pNP) in 1 minute at 37 centigrade, pH 5.0 f rom p-nitrophenyl-β-D-N-acetyl-glucosaminide
Molecular Mass	~140 kDa
Suggested usage	1. Add up to 100 µg of glycoprotein or 1 nmole of oligosaccharide to a tube. 2. Adjust to 14 µL final volume with de-ionized water. 3. Add 4 µL 5× reaction buffer (pH 5.0). 4. Add 2 µL of N-acetylglucosaminidase. 5. Incubate 3 hours at 37 centigrade. NOTE: If bisecting GlcNAc or β(1-2)GlcNAc-α(1-6)Man are present increase incubation nation time to 18 hours.
Unit Definition	One unit of N-acetylglucosaminidase is defined as the amount of enzyme required to produce 1 µmole of p-nitrophenol (pNP) in 1 minute at 37 centigrade, pH 5.0 from p-ni trophenyl-ß-D-N-acetyl-glucosaminide.
Purity	Each lot of N-acetylglucosaminidase is tested for contaminating protease as follows; 10 µg of denatured BSA is incubated for 24 hours with 2 µL of enzyme. SDS-PAGE analysis of the treated BSA shows no evidence of degradation. The production host strain has been extensively tested and does not produce any detectable glycosidases.
Applications	•Structural analysis of oligosaccharides •Distinguishing different N-acetyl glucosamine link ages •Distinguishing between N-acetyl glucosamine and N acetylgalactosamine •

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	Removing heterogeneity from glycoproteins
Stability	Stable at least 12 months when stored properly. Several days exposure to ambient temperatures will not reduce activity.
Storage	Store enzyme at 4 centigrade.
Storage Buffer	The enzyme is provided as a sterile-filtered solution in 20 mM Tris-HCl, 25 mM NaCl (pH 7.5).

GENE INFORMATION

Synonyms	β-N-acetylglucosaminidase; N-acetyl-β-d-glycosaminide N-acetylglucosaminohydrolase; glucosaminidase; hexosaminidase

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