CERTIFICATE OF ANALYSIS

PRODUCT NAME:	GLYKO® β (1-2,3,4,6) HEXOSAMINIDASE SEQUENCING-GRADE (Jack Bean)
PRODUCT CODE:	GKX-5023
LOT NUMBER:	183 010a
FORMULATION:	A sterile-filtered solution in 20 m*M* sodium citrate phosphate (pH 6.0)
STORAGE:	2-8°C
PACK SIZE:	15 Units
FILL VOLUME:	50 µl per vial
DIRECTIONS FOR USE:	See back of page for applications suggestions
EXPIRATION:	November 2018

QUALITY CONTROL

1.	Activity[1]:	Passed	(Specification: ≥300 U/ml)
2.	Specific activity:	Passed	(Specification: ≥40 U/mg)
3.	Protease assay[2]:	Passed	(Specification: "Not Detectable")
4.	Contaminants[3]:	Passed	(Specification: ≤0.01%)

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Date: 2018.05.11 12:56:23 -07'00'

Authorized Signature

1. One unit of β-N-Acetylhexosaminidase is defined as the amount of enzyme required to catalyze the release of 1 µmole of p-nitrophenol from pNP-N-acetyl-β-D-glucosaminide per minute at pH 5.0 and 37°C.

2. No protease activity was detectable after incubation of the enzyme with 0.2 mg resorufin-labeled casein for ~18 hours at 37°C based on Schickaneder E, Hösel W, von der Eltz H, Geuß U. Casein-resorufin, a new substrate for a highly sensitive protease assay. Fresenius Z. Anal Chem. 1988 330:360.

3. The absence of exoglycosidase contaminants was confirmed by extended incubations with the corresponding pNP-glycosides: α-mannosidase, β-mannosidase α-galactosidase, β-galactosidase, α-fucosidase, β-fucosidase, α-N-acetylgalactosaminidase, α-glucosidase, β-glucosidase and β-xylosidase. The product was tested for contaminating sialidase by extended incubation with MU-NANA.

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DIRECTIONS FOR USE:

Before use, briefly centrifuge the vial to ensure that all material is at the base of the vial. For the digestion of isolated glycans incubations should be performed at pH 4-5 at an enzyme concentration of 10-20 U/ml. Higher enzyme concentrations (50 U/ml) may be necessary to completely remove bisecting β(1-4)-linked GlcNAc residues in complex N-glycans, which are generally more resistant to enzymatic hydrolysis. As a guideline, digestions with isolated glycans should be performed for 16-24 hours at 37°C at a substrate concentration of approximately 20 μ*M*.

APPLICATIONS:

The enzyme exhibits a broad specificity, cleaving non-reducing terminal β(1-2,3,4 and 6)-linked N-acetylglucosamine (GlcNAc) and N-acetylgalactosamine (GalNAc) residues. It has proved very useful in the study of isolated glycans, glycolipids and glycoproteins, especially in combination with β-N-Acetylhexosaminidase from *S. pneumoniae* (GK80050).

The enzyme shows different pH optima for the hydrolysis of pNP-N-acetyl-β-D-glucosaminide (pH 5.0-6.0) and pNP-N-acetyl-β-D-galactosaminide (pH 3.5-4.0). At pH 4.5 the relative rates of hydrolysis of each substrate are virtually equal.