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β(1-2) Xylosidase

β (1-2) Xylosidase (β-D-xylanxylohydrolase, EC 3.2.1.37) cleaves xylose linked β(1-2) to the β-mannose of N-linked oligosaccharides found on plant and insect glycans. Substrates for β(1-2) Xylosidase are shown in Figure 1.

Any α(1-3)-linked mannose must first be removed. The enzyme will not cleave in the presence of α(1-3)- linked mannose, and α(1-6) linked mannose may slow the reaction rate. Use α(1-2, 3, 6) Mannosidase (GE 62) and α(1-6) core Mannosidase (GE 60) to remove all α-mannoses prior to treatment with β(1-2) Xylosidase.

Any other residues attached to the non-reducing end of the α(1-3) Mannose must also be removed.

β(1-2) Xylosidase is 40 times more active in the presence of 5 mM calcium chloride than without it.

β(1-2) Xylosidase is purified from *Xanthamonas*

β(1-2) Xylosidase is useful for:

- Xylose linkage determination
- Removing xylose from glycoproteins

Product Code: GE 77

Specifications

Activity: ≥ 20 U/mg ≥ 10 U/mL

Storage: Store at 4°C. Do not freeze.

Formulation: The enzyme is provided as a sterile-filtered solution in 20 mM Tris-HCl, 25 mM NaCl pH 7.5.

Stability: Stable at least 12 months when stored properly. Several days exposure to ambient temperatures will not reduce activity.

Product Description

Molecular Weight: ~100,000 Daltons

Specificity: Non-reducing terminal β(1-2) Xylose linked to a β-mannose when α(1-3) mannose has been removed.

Purity: Each lot of β(1-2) Xylosidase is tested for contaminating activities by incubating the enzyme for 24 hours at 37°C with the appropriate substrates; the detection limit of these assays is 5 μU/mL (IUB). A passing lot will have no detectable activity.

Contaminant	Substrate
β-N-acetylglucosaminidase	p-nitrophenyl-β-D-N-acetylglucosaminide
α/β-Galactosidase	p-nitrophenyl-α/β-D-galactopyranoside
α(1-2) Fucosidase	4-methylumbelliferyl-2-0-(α-L-fucopyranosyl)-β-D -galactopyranosidase
α(1-3, 4) Fucosidase	methylumbelliferyl Lewis X trisaccharide*
α-Mannosidase	p-nitrophenyl-α-D-mannopyranoside

*Lewis X trisaccharide is Gal β(1-4)[Fuc α(1-3)GlcNAc

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For the protease assay, 10 µg of denatured BSA is incubated for 24 hours with 2 µL of enzyme. Analysis of the BSA band after SDS-PAGE should show no evidence of degradation.

Assay

One unit of β(1-2) Xylosidase is defined as the amount of enzyme required to produce 1 nmole of methylumbelliferone in 1 minute at 37°C, pH 5.0, with 5 mM $CaCl_2$ from 4-methylumbelliferyl-7-β-D-xylopyranosidase (MU-Xyl).

Reagents

- 5X Reaction Buffer – 250 mM sodium acetate, 25 mM $CaCl_2$, pH 5.0.

Suggestions For Use

Procedure for De-xylosylation

1. Add up to 1 nmole of oligosaccharide to tube.

Reminder: if present, α(1-3) mannose must be removed first.

2. Add deionized water to a total of 15 µL.
3. Add 4 µL 5X Reaction Buffer.
4. Add 1 µL β(1-2) Xylosidase.
5. Incubate 18 hours at 37°C.

Selectin Biosciences Inc warrants that the above product conforms to the specifications described herein. Should the product fail for reasons other than through misuse Selectin Biosciences Inc. will, at its option, replace free of charge or refund the purchase price. This warranty is exclusive and Selectin Biosciences Inc. makes no other warrants, expressed or implied, including any implied conditions or warranties of merchantability or fitness for any particular purpose. Selectin Biosciences Inc. shall not be liable for any incidental, consequential or contingent damages..

This product is intended for in vitro research only.

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Figure 1 - Xylose residues cleaved by β(1-2) Xylosidase (shown in bold)
Man - Mannose; Fuc - Fucose; GlcNAc - N-acetylglucosamine; Xyl - Xylose