

Selectin Biosciences Inc.

$\alpha(1-2,3,4)$ Fucosidase

$\alpha(1-2,3,4)$ Fucosidase (α -L-fucoside fucohydrolase, EC 3.2.1.51) cleaves branched non-reducing terminal fucose, $\alpha(1-3)$ or $\alpha(1-4)$ linked to the N-acetylglucosamine of terminal Gal-GlcNAc disaccharide structures and terminal fucose $\alpha(1-2)$ -linked to the galactose. The presence of sialic acid linked to the galactose will block cleavage of $\alpha(1-3)$ and $\alpha(1-4)$ -linked fucose. Substrates for $\alpha(1-2,3,4)$ Fucosidase are shown in Figure 1.

$\alpha(1-2,3,4)$ Fucosidase is useful for:

- Fucose linkage determination
- Deglycosylating glycoproteins with Lewis structures

$\alpha(1-2,3,4)$ Fucosidase is isolated from *Xanthamonas*

Product code: GE 71

Specifications

Activity: ≥ 500 mU/mg , ≥ 100 mU/ml

Storage: Store at 4°C. Do not freeze.

Formulation: The enzyme is provided as a sterile-filtered solution in 20 mM Tris-HCl 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: ~90,000 Daltons

Purity: Each lot of $\alpha(1-2,3,4)$ Fucosidase is tested for contaminating substances by incubating the enzyme for 24 hours at 37°C with the substrates indicated in the table below. No detectable activity is evident for any of these potential contaminants. The detection limit of this assay is 5 μ U/mL (IUB).

Contaminant	Substrate
β -N-acetylglucosaminidase	p-nitrophenyl- β -D-N-acetylglucosaminide
α/β -Galactosidase	p-nitrophenyl- α/β -D-galactopyranoside
β -Xylosidase	4-methylumbelliferyl 7- β -D -xyloside
Protease	Denatured BSA

$\alpha(1-2,3,4)$ Fucosidase is tested for contaminating protease as follows: 10 μ g of denatured BSA is incubated for 24 hours with 2 μ l of enzyme. Analysis of the BSA band after SDS-PAGE should show no evidence of degradation.

Specificity: Non-reducing end branched fucose when linked $\alpha(1-3)$ and $\alpha(1-4)$ to the GlcNAc of a Gal-GlcNAc disaccharide and terminally linked fucose when linked $\alpha(1-2)$ to galactose. The presence of sialic acid linked to the galactose will block cleavage of the $\alpha(1-3)$ or $\alpha(1-4)$ linked fucose.

Assay

One unit of $\alpha(1-2,3,4)$ Fucosidase is defined as the amount of enzyme required to cleave 1 μ mole of fucose from Lewis X trisaccharide, 4-methylumbelliferyl glycoside in 1 minute at 37°C, pH 5.0.

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Reagents

- 5X Reaction buffer 5.0 - 250 mM NaHPO₄, pH 5.0.

Suggestions for Use

Procedure for De-fucosylation

1. Add up to 1 nmole of oligosaccharide to a tube.
2. Add deionized water to a total of 15 µL.
3. Add 4 µL 5X Reaction Buffer 5.0.
4. Add 1 µL of α(1-2,3,4) Fucosidase.
5. Incubate for 1 hour 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 - Fucose residues cleaved by $\alpha(1-2,3,4)$ Fucosidase (shown in bold)

Man - Mannose; Gal - Galactose; Fuc - Fucose; GlcNAc - N-acetylglucosamine;
 NeuAc - N-acetylneuraminic Acid (Sialic Acid); R - Residue

