

## $\alpha(1-3,4)$ FUCOSIDASE

### SPECIFICATIONS

**Product Code:** GKX-5019  
**Specific Activity:** >1.5 U/mg  
 Shipped on ice pack for next day delivery.  
 Store at -20°C.  
**Formulation:** Lyophilized from 50 mM sodium acetate, 3 mg/ml bovine serum albumin (pH 5.0).  
**Stability:** Stable at least 12 months when stored properly.

Note: 2 Units is equal to 1 Unit as previously reported by Glyko, Inc.

Glyko®  $\alpha(1-3,4)$  Fucosidase is extracted from almond meal and purified by affinity and other proprietary chromatographic techniques.

Applications:

- Analysis of fucosylated O-linked and N-linked glycans using sequential digestion with exoglycosidases.
- Analysis and modification of blood group oligosaccharides since it is active towards the Lewis X ( $Le^x$ ) antigen<sup>1</sup>.

### PRODUCT DESCRIPTION

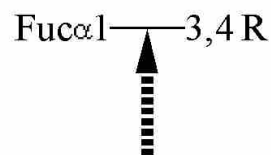
**Supplied Reagents** (retail packs only)

WS0062 5x Reaction Buffer  
 (250 mM sodium acetate, pH 5.0)

**Purity:** No protease activity was detectable after incubation of the enzyme with azocoll for 18 hours at 37°C according to the method of Chavira<sup>2</sup>.

Assays for exoglycosidase contaminants consist of extended incubations with the appropriate substrates. Lot-specific results are reported on the Certificate of Analysis.

**Specificity:** The enzyme cleaves non-reducing  $\alpha(1-3$  or  $1-4)$ -linked terminal fucose residues<sup>3</sup>.



**Molecular Weight:** ~106,000 daltons, composed of two identical subunits with molecular weight of 54 kD<sup>1</sup> each.

**pH Optimum:** pH 5.0

**Stability:** After reconstitution with the incubation buffer supplied with the enzyme, >85% of the original activity is observed after two months at 4°C. In the buffer solution at 37°C, the half-life is approximately 80 hours.

**Storage:** Store lyophilized enzyme at -20°C. Enzyme reconstituted with the provided reaction buffer is stable at 4°C for at least two months and may be stored at -20°C for at least six months. Avoid repeated freeze/thaw cycles.

## ASSAY

One unit of Glyko®  $\alpha(1-3,4)$  Fucosidase is defined as the amount of enzyme which will release one  $\mu$ mole of fucose from lacto-N-fucopentaose II (Cat. No. GKAD-01007) per minute at pH 5.0 and 37°C. The enzyme is not active on *p*NP- $\alpha$ -fucopyranoside.

Note: Two units is equal to one unit as previously reported by Glyko, Inc.

## SUGGESTIONS FOR USE

Before use, briefly centrifuge the vial to ensure all material is at the bottom of the vial. Ensure that reagents, substrates and laboratory-ware are free from contaminants and proteases.

Reconstitute by dissolving the enzyme at an appropriate concentration in a suitable buffer (50 mM sodium acetate, pH 5.0 is recommended as an incubation buffer and is supplied as a 5x concentrate).

The appropriate enzyme concentration depends on the substrate to be digested. Use the enzyme at 0.4 mU/ml for the removal of  $\alpha(1-3/4)$  fucose from O-glycans.

Higher enzyme concentrations are required for the removal of  $\alpha(1-3/4)$  fucose from complex N-glycans. For example, complete hydrolysis of Fuc- $\alpha(1-3)$ GlcNAc from the outer arms of a di- $\alpha(1-3)$ -fucosylated, di- $\alpha(1-2)$ -fucosylated bi-antennary N-glycan isolated from human parotid gland was obtained at a final substrate concentration of 1  $\mu$ M and a final enzyme concentration of 6 mU/ml. In general, use the enzyme at 4-8 mU/ml for digestion of N-glycans. Incubate 16-24 hours at 37°C.

## REFERENCES

1. Scudder, P. *et al.* **J Biol Chem** **265**: 16472-16477 (1990).
2. Chavira, R. *et al.* **Anal Biochem** **136**: 446-450 (1984).
3. Yoshima, H. *et al.* **Arch Biochem Biophys** **194**: 394-398 (1979).



1933 Davis Street, Suite 207  
San Leandro, CA 94577-1258

TOLL FREE (800) 457-9444  
PHONE (510) 638-6900  
FAX (510) 638-6919

E-MAIL [info@prozyme.com](mailto:info@prozyme.com)  
WEB [www.prozyme.com](http://www.prozyme.com)