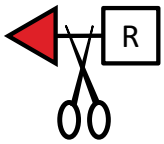
Thermophilic Fucosidase contents

Catalog #	Description	Size	M. W.	Purity	pH Range	Storage
GE0601	Thermophilic Fucosidase	200 units, lyophilized	55,500	> 95%	3.5-8.0	-20°C, 12 months
BA0801	10X Reaction Buffer 4	1 mL			7.5	4 to 25°C
BA1101	10X Reaction Buffer 7	1 mL			5.0	4 to 25°C

This product is for research use only and not for resale or for any use in the manufacture of a therapeutic or for any diagnostic purpose.

Product description: This product is a recombinant α-L-fucosidase (glycosyl hydrolase family GH29, EC #3.2.1.51) cloned from *Thermotoga maritima*, a hyperthermophilic bacterium, and expressed in *Escherichia coli* with an *N*-terminal 8xHis-tag. The 8xHis tag may be removed by digestion with FasTEV™ (Cat #GE0501), a TEV protease with enhanced stability and catalytic activity.

Thermophilic Fucosidase is active at a wide range of temperatures (37 to 97°C), with an optimum of 70°C or higher. The specificity of Thermophilic Fucosidase depends on linkage type and glycan substructure. At 37°C, it primarily releases α1,2-linked fucose. At 70°C, it preferentially cleaves Fucα1,2 > Fucα1,3 ≈ Fucα1,4 ≈ Fucα1,6 linkages.



This product does not contain any detectable activities of proteases or other glycosidases.

Thermophilic Fucosidase is supplied with two 10X Reaction Buffers to ensure optimal digestion and ease of use. Reaction Buffer 4 (Cat #BA0801) is used for reactions that require higher than neutral pH buffering, and Reaction Buffer 7 (Cat #BA1101) is the optimal buffer for most digestions.

Unit definition: One unit is defined as the amount of Thermophilic Fucosidase required to catalyze the release of 1 nmole *p*-nitrophenol (pNP) from *p*-nitrophenyl-α-L-fucopyranoside (pNP-Fuc) per min at 37°C in 100 µL 1X Reaction Buffer 4 (50 mM Tris-HCl, 100 mM NaCl, pH 7.5).

Activity assay: One unit of enzyme is added to 100 µL of 500 µM pNP-Fuc in 1X Reaction Buffer 7 (50 mM sodium citrate, pH 5.0) at 37°C for 30 min, followed by addition of 100 µL of a stop solution (0.2 M sodium borate, pH 9.8). Measure absorption at 405 nm on a plate reader.

Product reconstitution: Dissolve the lyophilized product in 100 µL of molecular grade water to make a 2,000 units/mL (Cat #GE0601) solution in 1X Reaction Buffer 4. Once reconstituted, store the enzyme at -20 to 4°C for up to 1 month. Aliquoting is recommended to avoid repeated freeze-thaw cycles.

Reference: Sulzenbacher G, et al. J Biol Chem. 2004 Mar 26;279(13):13119-28. PMID: 14715651.