

## Recombinant Enzyme Product Specification Sheet

<b>Cat. No.:</b>	PRO-E0052
<b>LOT:</b>	2008-0052
<b>Activity:</b>	$\beta$ -Mannosidase
<b>Synonyms:</b>	Mannanase; mannase; $\beta$ -D-mannosidase; $\beta$ -mannoside mannohydrolase; exo- $\beta$ -D-mannanase; $\beta$ -D-mannoside mannohydrolase; beta-mannosidase; beta-D-mannosidase; beta-mannoside mannohydrolase; exo-beta-D-mannanase; beta-D-mannoside mannohydrolase
<b>Nomenclature:</b>	CAZy [GH2, glycoside hydrolase family 2, member of clan GH-A], Bt0458, BtMan2A, mannosidase 2A, Man2A
<b>Source organism:</b>	<i>Bacteroides thetaiotaomicron</i> VPI-5482
<b>Enzyme Commission No.:</b>	3.2.1.25
<b>Activity:</b>	45.27 U/mL
<b>Specific activity:</b>	10.62 U/mg
	} (37°C; pH 5.6; 5 mg/mL ivory nut mannan)
<b>Purity:</b>	> 95 % as judged by SDS-PAGE
<b>Form and storage:</b>	Supplied in 3.2 M ammonium sulphate, store at 4°C (shipped at room temperature)
<b>pH optimum:</b>	5.6
<b>Temperature optimum:</b>	-
<b>[Protein]:</b>	4.26 mg/mL
<b>Sequence length:</b>	813 amino acids ( <a href="#">view sequence</a> )
<b>Accession No.:</b>	Q8AAK6; AE015928; BTHE226186:BT_0458-MON
<b>Molecular weight:</b>	96040.16 Da (theoretical) ~ 90000 Da (observed by SDS-PAGE) - (observed by mass spectrometry)
<b>Biological function:</b>	Catalyses the hydrolysis of terminal, non-reducing $\beta$ -D-mannose residues in $\beta$ -D-mannosides
<b>Potential application(s):</b>	<a href="#">Biomass conversion</a> , <a href="#">carbohydrate research</a>
<b>Comments:</b>	PDB: 2JE8, 2VJX, 2VL4, 2VMF, 2VO5, 2VOT, 2VQT, 2VQU, 2VR4. <b>Note:</b> different to $\beta$ -mannanase (EC 3.2.1.78)

- Usage:** Agitate bottle sufficiently to fully homogenise enzyme precipitate before use
- Assay:** One unit is defined as the amount of enzyme required to release 1  $\mu\text{mol}$  of D-mannose per minute from ivory nut mannan (5 mg/mL; freshly treated with 10 % sodium hydroxide and neutralised with acetic acid) in 50 mM sodium phosphate buffer, pH 5.6, containing 1 mg/mL BSA, at 37°C, and using the method of Miller (1957) to follow reducing sugar liberated at 575 nm

**Primary sequence:**

QGNDTSEVMLLDGTGWEFSQSGTEKWMPATVPGTVHQDLISHELLPNPFYGMNEKKIQWVENEDWEYRTSFIVSEE  
QLNRDGIQLIFEGLDITYADVYLNGSLLLKADNMFGYTLFVKSVLRKGENHLYIYFHSPIRQTLPOYASNGFNYP  
ADNDHHEKHLVFSRKAPYSYGWDWGI RMVTSVWRPVTLRFYDIATISDYVVRQLSLTDENARLSNELIVNQIV  
PQKIPAEVRVNVSLNGTTVTEVKQQVTLQPGINHITLPAEVTNPVRWMPNGWGTPTLYDFSAQIACGDRIVAEQS  
HRIGLRTIRVVNEKDKDGESFYFEVNGI PMFAKGANYIPQDALLPNVTTERYQTLFRDMKEANMNMVRIWGGGTY  
ENNLFYDLADENGILVWQDFMFACTPYPSPDPTFLKRVEAEAVYNIRRLRNHASLAMWCGNNEILEALKYWGFEKK  
FTPEVYQGLMHGYDKLFRELLPSTVKEFDSDFYVHSSPYLANWGRPESWGTGDSHNWGVWYGKPPFESLDTDLP  
RFMSEFGFQSFPEMKTIAAFAAPEDYQIESEVMNAHQKSSIGNSLIRTYMERDYIIPESFEDFVYVGLVLQGGGM  
RHGLEAHRNRNRPYCMGTLYWQLNDSWPVVSWSIDYYGWVKALHYQAKRAFAPVLINPIQQNDSLSVYLISDRLD  
TMEQMTLEMKVVDGKTLGKKIQVHSLEVPANTSKCVYRAKLDGWLTPEDCRRSFLKLLKDKSGHQVAESVHF  
FRKTKDLQLPPTS SVSYQMKQTDGKCELT L FSSMLAKDIF IETPLQGARYSDNFFDLLPGERKK

- Literature:** 1. Tailford *et al.* (2007) *J. Biol. Chem.* **282**, 11291-11299