

Recombinant Enzyme Product Specification Sheet

Cat. No.:	PRO-E0024
LOT:	2008-0024
Activity:	Galactan 1,3- β -galactosidase
Synonyms:	Exo- β -1,3-galactosidase; galactan 3- β -D-galactosidase; exo-beta-1,3-galactosidase; galactan 1,3-beta-galactosidase; galactan 3-beta-D-galactosidase
Nomenclature:	CAZy [GH43, glycoside hydrolase family 43, member of clan GH-F]
Source organism:	<i>Clostridium thermocellum</i> ATCC 27405
Enzyme Commission No.:	3.2.1.145
Activity:	16 U/vial
Specific activity:	20 U/mg
	} (50°C; pH 6; β -1,3-galactan)
Purity:	> 95 % as judged by SDS-PAGE
Form and storage:	Lyophilised powder, store at -20°C (shipped at room temperature)
pH optimum:	6 (stable from 3 - 10)
Temperature optimum:	50°C (stable up to 55°C)
[Protein]:	0.8 mg/mL
Sequence length:	324 amino acids (view sequence)
Accession No.:	ABN51896
Molecular weight:	37692 Da (theoretical)
	~ 37900 Da (observed by SDS-PAGE)
	- (observed by mass spectrometry)
Biological function:	Catalyses the hydrolysis of terminal, non-reducing β -D-galactose residues in (1 \rightarrow 3)- β -D-galactopyranans
Potential application(s):	Biomass conversion , carbohydrate research
Comments:	This enzyme removes not only free galactose, but also 6-glycosylated residues, e.g., (1 \rightarrow 6)- β -D-galactobiose, and galactose bearing oligosaccharide chains on O-6. Hence, it releases branches from [<i>arabino</i> -galacto-(1 \rightarrow 6)]-(1 \rightarrow 3)- β -D-galactans

Usage: Dissolve to 0.8 mg/mL in 50 mM phosphate buffer, pH 6.0, containing 20 mM NaCl and aliquot for storage at -20°C. The enzyme should be stable for 6 months when stored in this manner

Assay: One unit is defined as the amount of enzyme required to release 1 μ mol of galactose-reducing-sugar equivalents per minute from β -1,3-galactan in phosphate buffer, pH 6.0, at 60°C, where reducing sugars are measured by the method of Miller (1959; *Anal. Chem.* **31**, 426-428)

Primary sequence:

MAEGVIVNGTQFKDTSGNVIHAHGGGMLKHGDYYYWYGEYRDDSNLFLGVSCYRSKDLVNWEYRGEVLSRNSAPE
LNHCNIERPVMYNASTGEFVMMHWENGINYQARAAYVAYSKTPDGKFTYIRSFRPMQDTGMDHGLPGYMSRD
CNVFDVTDGKGYFISAANENMDLHLYELTPDYKNIASLKAKLFVGGQREAPCLIKRNGYYYLITSGCTGWNPNQA
KYAYSKDLASGWSQLYNLGNSTTYRSQPTFIIIPVQGSSGTSYLYMGDRWAGAWGGKVND SQYVWLP LNFI SDTTL
ELPYYDSVKIDASSGIISEYIPDT

Literature: 1. Ichinose *et al.* (2006) *Appl. Envir. Microbiol.* **72**, 3515-3523