

Recombinant Enzyme Product Specification Sheet

Cat. No.:	PRO-E0003
LOT:	2008-0003
Activity:	β -1,3-Glucanase
Synonyms:	Glucan endo-1,3- β -D-glucosidase; endo-1,3- β -glucanase; laminarinase; laminaranase; oligo-1,3-glucosidase; callase; β -1,3-glucanase; kitalase; 1,3- β -D-glucan 3-glucanohydrolase; endo-(1,3)- β -D-glucanase; (1 \rightarrow 3)- β -glucan 3-glucanohydrolase; endo-1,3- β -D-glucanase; endo-1,3- β -glucosidase; 1,3- β -D-glucan glucanohydrolase; 3- β -D-glucan glucanohydrolase; glucan endo-1,3-beta-D-glucosidase; endo-1,3-beta-glucanase; beta-1,3-glucanase; 1,3-beta-D-glucan 3-glucanohydrolase; endo-(1,3)-beta-D-glucanase; (1 \rightarrow 3)-beta-glucan 3-glucanohydrolase; endo-1,3-beta-D-glucanase; endo-1,3-beta-glucosidase; 1,3-beta-D-glucan glucanohydrolase; 3-beta-D-glucan glucanohydrolase
Nomenclature:	CAZy [GH81, glycoside hydrolase family 81] , Lam81A, Cthe_0660
Source organism:	<i>Clostridium thermocellum</i> ATCC 27405
Enzyme Commission No.:	3.2.1.39
Activity:	900 U/mL
Specific activity:	1500 U/mg
	} (60°C; pH 6; soluble laminarin)
Purity:	> 95 % by SDS-PAGE
Form and storage:	Supplied in 3.2 M ammonium sulphate, store at 4°C (shipped at room temperature)
pH optimum:	6 (stable from 5.5 – 6.5)
Temperature optimum:	65°C (stable up to 70°C)
[Protein]:	0.6 mg/mL
Sequence length:	721 amino acids (view sequence)
Accession No.:	ABN51895
Molecular weight:	82262.8 Da (theoretical)
	~ 81700 Da (observed by SDS-PAGE)
	- (observed by mass spectrometry)
Biological function:	Catalyses the hydrolysis of (1 \rightarrow 3)- β -D-glucosidic linkages in (1 \rightarrow 3)- β -D-glucans

Potential application(s):	Biocatalysis , biomass conversion , carbohydrate research
Comments:	Different from endo-1,3(4)- β -glucanase (EC 3.2.1.6). Hydrolyses laminarin, paramylon and pachyman, with less activity on mixed-linkage (1,3-1,4)- β -D-glucans
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 μ mol of glucose-reducing-sugar equivalents per minute from laminarin in 50 mM phosphate buffer, pH 6.0, at 60°C, where reducing sugars are measured by the method of Miller (1959; <i>Anal. Chem.</i> 31 , 426-428)

Primary sequence:

MQYYREGTGSYTVVLPFGAKVPQAEIYKTSNLQGAVPTNSWESSILWNQYSLPIYAHPLTFKFKAEGIEVGKPAL
GGSGIAYFGAHKNDFTVGHSSVYTFPDARADKISDFAVDAVMASGSGSIKATLMKGSFYAYFVFTGGNPRIDFSG
TPTVFGDSGSQCLGVTINGVNYGLFAPSGSKWQIGTGTITCILPAGKNYFSIAVLPDNTVSTLTYYKDYAYCF
VTDTKVEWSYNETESTLTTTTFTAEVSVKEGTNKGITILALYPHQWRNNPHILPLPYTYSTLRGIMKTIQGTSEKTV
YRYHGILPNLPDKGTYDREALNRYINELALQADAPVAVDTYWFGKHLGKLSALPIAEQLGNISAKDRFISFMKS
SLEDWFTAKEGETAKLFYDSDNWGTLIGYPSSYGSDEELNDHHFHYGYFLHAAAQIALRDPQWASRDNWGAMVEL
LIKDIANWRNDTRFPFLRNFDPEYEGHSGHAGFADGNNQESSEAINAWQAIILWGEATGNKTIRDLGIYLY
TTEVEAVCNWFDLYKDI FSPSYGHNYASMVWGGKYCHEIWWNGTNSEKHGINFLPITAASLYLGKDPNYIKQNY
EEMLRCCGTSQPPNWKDIQYMYALYDPAAAKNMWNESIVPEDGESKAHTYHWICNLDSLGLPDFSVTADTPLY
VFNKNNIRTYVVYNASSAKKVTFSDGKVMTVGPHSMAVSTGSESE

Literature: Unpublished data