

## Recombinant Enzyme Product Specification Sheet

<b>Cat. No.:</b>	PRO-E0003	<a href="#">add this product to cart</a>
<b>LOT:</b>	2012-0003 (Batch 09091)	
<b>Activity:</b>	β-1,3-Glucanase	
<b>Synonyms:</b>	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→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→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	
<b>Nomenclature:</b>	CAZy [GH81, <a href="#">glycoside hydrolase family 81</a> ], Lam81A, Cthe_0660	
<b>Source organism:</b>	<i>Clostridium thermocellum</i> ATCC 27405	
<b>Enzyme Commission No.:</b>	3.2.1.39	
<b>Activity:</b>	4500 U/mL	}
<b>Specific activity:</b>	1500 U/mg	
	(60°C; pH 6; soluble laminarin)	
<b>Purity:</b>	> 95 % by SDS-PAGE	
<b>Form and storage:</b>	Supplied in 35 mM HEPES buffer, pH 7.8, containing 750 mM NaCl, 5 mM imidazole, 2.5 mM CaCl <sub>2</sub> , 0.02 % (w/v) sodium azide and 25 % (v/v) glycerol, store at -20°C (shipped at room temperature)	
<b>pH optimum:</b>	6 (stable from 5.5 – 6.5)	
<b>Temperature optimum:</b>	65°C (stable up to 70°C)	
<b>[Protein]:</b>	3 mg/mL	
<b>Sequence length:</b>	721 amino acids ( <a href="#">view sequence</a> )	
<b>Accession No.:</b>	ABN51895	
<b>Molecular weight:</b>	82262.8 Da	(theoretical)
	~ 81700 Da	(observed by SDS-PAGE)
	-	(observed by mass spectrometry)
<b>Biological function:</b>	Catalyses the hydrolysis of (1→3)-β-D-glucosidic linkages in (1→3)-β-D-glucans	

<b>Potential application(s):</b>	<a href="#">Biocatalysis</a> , <a href="#">biomass conversion</a> , <a href="#">carbohydrate research</a>
<b>Comments:</b>	Different from endo-1,3(4)- $\beta$ -glucanase ( <a href="#">EC 3.2.1.6</a> ). Hydrolyses laminarin, paramylon and pachyman, with less activity on mixed-linkage (1,3-1,4)- $\beta$ -D-glucans
<b>Usage:</b>	Flick vial to remove glycerol storage buffer from lid before opening
<b>Assay:</b>	One unit is defined as the amount of enzyme required to release 1 $\mu$ 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> <b>31</b> , 426-428)

**Primary sequence:**

MQYYREGTGSYTVVLPFGAKVPQAEIYKTSNLQGA VPTNSWESSILWNQYSLPIYAHPLTFKFKAE GIEVGKPAL  
GGSGIAYFGAHKNDFTVGHSSVYTFPDARADKISDFAVDAVMASGSGSIKATLMKGS PYAYFVFTGGNPRIDFSG  
TPTVIFYGDSGSQCLGVTINGVNYGLFAPSGSKWQIGTGTITCILPAGKNYFSIAVLPDNTVSTLTYYKDYAYCF  
VTDTKVEWSYNETESTLTTTFTA EVSVKEGTNKGTILALYPHQWRNNPHILPLPYTYSTLRGIMKTIQGT SFKTV  
YRYHGILPNLPDKGTYDREALNRYINELALQADAPVAVDTYWFGKHLGKLS CALPIAEQLGNI SAKDRFISFMKS  
SLEDWFTAKEGETAKLFYYDSNWGTLIGYPSSYGSDEELNDHFFHYGYFLHAAAQIALRDPQWASRDNWGAMVEL  
LIKDIANWDRNDTRFPFLRNFDPYEGH SWASGHAGFADGNNQESSSEAINAWQAIILWGEATGNKTIRDLGIYLY  
TTEVEAVCNWF DLYKDI FSPSYGHNYASMVWGK YCHEIWWNGTNSEKHGINFLPIT AASLYLGKDPNYIKQNY  
EEMLRCEGTSQPPNWKDIQYMYALYDPAAAKNMWNE SIVPEDGESKAHTYHWICNLDSLGLPDFSVTADT PLYS  
VFNKNNIRTYVVYNASSAKKVTFS DGKVM TVGPHSMAVSTGSESE

**Literature:** Unpublished data