

Recombinant Enzyme Product Specification Sheet

Cat. No.:	PRO-E0020
LOT:	2008-0020
Activity:	Cellulase
Synonyms:	Endo-1,4- β -D-glucanase; β -1,4-glucanase; β -1,4-endoglucan hydrolase; cellulase A; cellulysin AP; endoglucanase D; alkali cellulase; cellulase A 3; celludextrinase; 9.5 cellulase; avicelase; pancellase SS; 1,4-(1,3;1,4)- β -D-glucan 4-glucanohydrolase; 4-(1,3;1,4)- β -D-glucan 4-glucanohydrolase; endo-1,4-beta-D-glucanase; beta-1,4-glucanase; beta-1,4-endoglucan hydrolase; 1,4-(1,3;1,4)-beta-D-glucan 4-glucanohydrolase; 4-(1,3;1,4)-beta-D-glucan 4-glucanohydrolase
Nomenclature:	CAZy [GH44, glycoside hydrolase family 44]
Source organism:	<i>Clostridium thermocellum</i> F1
Enzyme Commission No.:	3.2.1.4
Activity:	300 U/mL
Specific activity:	150 U/mg
	} (60°C; pH 5; β -glucan)
Purity:	> 90 % as judged by SDS-PAGE
Form and storage:	Supplied in 3.2 M ammonium sulphate, store at 4°C (shipped at room temperature)
pH optimum:	5 (stable from 4 - 6)
Temperature optimum:	65°C (stable up to 70°C)
[Protein]:	2 mg/mL
Sequence length:	513 amino acids (view sequence)
Accession No.:	BAA12070
Molecular weight:	58116.4 Da (theoretical)
	~ 58300 Da (observed by SDS-PAGE)
	- (observed by mass spectrometry)
Biological function:	Catalyses the endohydrolysis of (1 \rightarrow 4)- β -D-glucosidic linkages in cellulose, lichenin and cereal β -D-glucans
Potential application(s):	Biomass conversion , carbohydrate research
Comments:	Also hydrolyses 1,4-linkages in β -D-glucans also containing 1,3-linkages

- 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 μmol of glucose-reducing-sugar equivalents per minute from β -glucan in 50 mM MES buffer, pH 5.0, at 60°C, where reducing sugars are measured by the method of Miller (1959; *Anal. Chem.* **31**, 426-428)

Primary sequence:

MAKVVDIRIDTSAERKPI SPYIYGSNQELDATVTAKRFGGNRTTGYNWENNFSNAGSDWLHYSPTYLLEDGGVPK
GEWSTPASVVTTFHDKALSKNVPYTLITLQAAGYVSADGNPVSQEETAPSSRWKEVKFEKGAPFSLTPDTEDDY
VYMDEFVNYLVNKYGNASTPTGIKGSIDNEPALWSHTHPRIHPDNVTAKELIEKSVALS KAVKKVDPYAEIFGP
ALYGFAAYETLQSAPDWGTEGEGYRWFIDYYLDKMKKASDEEGKRLLDVLDVHWYPEARGGGERICFGADPRNIE
TNKARLQAPRTLWDPTYIEDSWIGQWKDFLPILPNLLDSIEKYYPGTKLAITEYDYGNGNHITGGIAQADVLGI
FGKYGVYLLATFWGDASNNYTEAGINLYTNYDGKGGKFGDTSVKCETSDIEVSSAYASIVGEDDSKLI ILLNKNY
DQPTTFNFSIDSSKNYTI GNVWAFDRGSSNITQRTPIVNIKDNTFTYTPALTACHIVLEAAE

- Literature:** 1. Najmudin *et al.* (2006) *J. Biol. Chem.* **281**, 8815-8828