

Recombinant Enzyme Product Specification Sheet

Cat. No.:	PRO-E0011
LOT:	2008-0011
Activity:	Xylanase
Synonyms:	Endo-(1→4)-β-xylan 4-xylanohydrolase; endo-1,4-xylanase; xylanase; β-1,4-xylanase; endo-1,4-xylanase; endo-β-1,4-xylanase; endo-1,4-β-D-xylanase; 1,4-β-xylan xylanohydrolase; β-xylanase; β-1,4-xylan xylanohydrolase; endo-1,4-β-xylanase; β-D-xylanase; 4-β-D-xylan xylanohydrolase; endo-(1→4)-beta-xylan 4-xylanohydrolase; beta-1,4-xylanase; endo-beta-1,4-xylanase; endo-1,4-beta-D-xylanase; 1,4-beta-xylan xylanohydrolase; beta-xylanase; beta-1,4-xylan xylanohydrolase; endo-1,4-beta-xylanase; beta-D-xylanase; 4-beta-D-xylan xylanohydrolase
Nomenclature:	CAZy [GH10, glycoside hydrolase family 10, member of clan GH-A] , CtCBM22-GH10, CBM22, xylanase 10C
Source organism:	<i>Clostridium thermocellum</i> F1
Enzyme Commission No.:	3.2.1.8
Activity:	112.5 U/mL
Specific activity:	450 U/mg
	} (60°C; pH 7; soluble wheat flour arabinoxylan)
Purity:	> 95 % 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:	5.5 (stable from 4 – 11)
Temperature optimum:	65°C (stable up to 75°C)
[Protein]:	0.25 mg/mL
Sequence length:	512 amino acids (view sequence)
Accession No.:	BAA21516
Molecular weight:	59164.6 Da (theoretical)
	~ 59300 Da (observed by SDS-PAGE)
	- (observed by mass spectrometry)
Biological function:	Catalyses the endohydrolysis of (1→4)-β-D-xylosidic linkages in xylans
Potential application(s):	Biomass conversion , carbohydrate research

- Comments:** The enzyme contains an N-terminal family 22 CBM and a C-terminal GH10 xylanase catalytic module
- Usage:** To recover maximal CtCBM22-GH10 activity, centrifuge a required volume of the precipitated protein suspension provided at 13000 \times g for 5 min, remove the supernatant and re-suspend the resulting pellet in the same volume of 20 mM Tris-HCl at pH 7.5 with 20 mM NaCl and 5 mM CaCl₂
- Assay:** One unit is defined as the amount of enzyme required to release 1 μ mol of xylose-reducing-sugar equivalents per minute from soluble wheat flour arabinoxylan in 50 mM Tris-HCl, pH 7.0, 5 mM CaCl₂, at 60°C, where reducing sugars are measured by the method of Miller (1959; *Anal. Chem.* **31**, 426-428)

Primary sequence:

MAALIYDDFETGLNGWGRGPETVELTTEEAYSGRYSLKVSGRTSTWNGPMVDKTDVLTGLGESYKLGV
YVKFVGDSYSNEQRFSLQLQYNDGAGDVYQNIKTATVYKGTWTLLEGQLTVP SHAKDVKIYVETE FKN
SPSPQDLMDFYIDDF TATPANLPEIEKDI PSLKDV FAGYFKVGG AATVAELAPKPAKELFLKH YNSLT
FGNELKPE SVLDYDATIAYMEANGGDQVNPQITLRAARPLLEFAKEHNI PVRGHTLVWHSQTPDWFFR
ENYSQDENAPWASKEV MLQRLENYIKNLMEALATEYPTVKFYAWDVVNEAVDPNTSDGMRTPGSNNKN
PGSSLWMQTVGRDFIVKAF EYARKYAPADCKLFYNDYNEYEDRKCDFIIEILTELKAKGLVDGMGMQS
HWVMDYPSISMF EKSI RRYAALGLEIQLTELDIRNPDNSQWALERQANRYKELVTKLVDLKKEGINIT
ALVFWGITDATSWLGGYPLLFDAEYKAKPAFYAIVN

- Literature:** 1. [Hayashi et al. \(1997\) J. Bacteriol. 179, 4246-4253](#)