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Recombinant Enzyme Product Specification Sheet

Cat. No.:	PRO-E0007
LOT:	2008-0007
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], XynA, *Cj*CBM22-GH10
Source organism:	*Cellvibrio japonicus* NCIMB 10462
Enzyme Commission No.:	3.2.1.8
Activity:	2700 U/mL (37°C; pH 7.5; soluble wheat arabinoxylan)
Specific activity:	1800 U/mg
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:	7.5 (stable from 7 – 8)
Temperature optimum:	37°C (stable at up to 40°C)
[Protein]:	1.5 mg/mL
Sequence length:	507 amino acids (view sequence)
Accession No.:	CAA33469
Molecular weight:	57081.1 Da (theoretical) ~ 56200 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

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Comments: PDB: 1clx (structure of catalytic module). Note: this construct comprises the N-terminal family 22 carbohydrate binding module of Xylanase 10B from *Clostridium thermocellum*, in fusion with the family 10 glycoside hydrolase catalytic module of Xylanase 10A from *Cellvibrio japonicus* NCIMB 10462

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 xylose-reducing-sugar equivalents per minute from soluble wheat arabinoxylan in 50 mM Tris-HCl, pH 7.5, 5 mM $CaCl_2$, at 37°C, where reducing sugars are measured by the method of Miller (1959; *Anal. Chem.* **31**, 426-428)

Primary sequence:

MSQLYADYEVVHDTFEVNFDGWCNLGVDTYLTAVENEGNNGTRGMMVINRSSASDGAYSEKGFYLDGGVEYKYSV
FVKHNGTGTETFKLSVSYLDSETEEENKEVIATKDVVAGEWTEISAKYKAPKTAVNITLSITTDSTVDFIFDDVT
ITRKGVATGNGLASLADFPIGVAVAASGGNADIFTSSARQNIVRAEFNQITAENIMKMSYMYSGSNFSFTNSDRL
VSWAAQNGQTVHGHALVWHPSYQLPNWASDSNANFRQDFARHIDTVAAHFAGQVKSWDVVNEALFDSADDPDGRG
SANGYRQSVFYRQFGGPEYIDEAFRRARAADPTAELYYNDFNTEENGAKTTALVNLVQRLLNNGVPIDGVGFQMH
VMNDYPSIANIRQAMQKIVALSPTLKIKITELDVRLNNPYDGNSSNDYTNRNDCAVSCAGLDRQKARYKEIVQAY
LEVVPPGRRGGITVWGIADPDSWLYTHQNLPDWPLLFNDNLQPKPAYQGVVEALSGR

Literature:
1. Charnock *et al.* (1997) *J. Biol. Chem.* **272**, 2942-2951