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Recombinant Enzyme Product Specification Sheet

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Cat. No.:	PRO-E0412
LOT:	2009-0412
Activity:	α-Amylase
Synonyms:	Glycogenase; α amylase; endoamylase; Taka-amylase A; 1,4-α-D-glucan glucanohydrolase; 4-α-D-glucan glucanohydrolase; alpha-amylase; alpha amylase; 1,4-alpha-D-glucan glucanohydrolase; 4-alpha-D-glucan glucanohydrolase
Nomenclature:	CAZy [GH13 subf5, glycoside hydrolase family 13 subfamily 5, member of clan GH-H], cytoplasmic α-amylase, BF3048
Source organism:	*Bacteroides fragilis* NCTC 9343
Enzyme Commission No.:	3.2.1.1
Activity:	72.14 U/mL (25°C; pH 7.0; 6.25 mg/mL soluble starch)
Specific activity:	36.25 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:	-
Temperature optimum:	~ 25°C
[Protein]:	1.99 mg/mL
Sequence length:	481 amino acids (view sequence)
Accession No.:	Q5LAX9, YP_212662.1
Molecular weight:	59099.7 Da (theoretical)
	~ 60000 Da (observed by SDS-PAGE)
	- (observed by mass spectrometry)
Biological function:	Endohydrolysis of (1->4)-α-D-glucosidic linkages in oligosaccharides and polysaccharides
Potential application(s):	Carbohydrate research, fundamental research
Comments:	This cytoplasmic enzyme acts on starch, glycogen and related polysaccharides

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Usage: Agitate vial sufficiently to fully homogenise enzyme precipitate before use

Assay: One unit is defined as the amount of enzyme required to release 1 µmol of D-glucose equivalents per minute from soluble starch (6.25 mg/mL; Sigma S-9765; ACS reagent; solubilised by boiling for 5 min in H_2O) in 31.25 mM sodium phosphate buffer pH 7.0, containing 0.625 mg/mL BSA, at 25^{o}C, and using the DNSA assay method of Miller (1959; *Anal. Chem.* **31**, 426-428) to follow reducing sugar liberated at 575 nm

Primary sequence:

MENGVMMQYFEWNLPNDGNLWKQLKEDASHLHEIGVTAVWIPPAYKADEQQDEGYATYDLYDLGEFDQKETVRTK
YGTKEELKEMIDELHKNHISVYLDVVLNHKAGGDFTEKFIVVEVDPNDRTQALGKPFEIQGWTGYSFHGRKDKYS
DFKWHWYHFSGTGFDDAKKRSGIFQIQGEGKAWSEGVDNENGNYDFLLCNDIDLDHPEVVTELNRWGKWVSKELN
LDGMRLDAIKHMKDKFIAQFLDAVRSERGDKFYAVGEYWNGDLNTLDAYIKSVGHKVNLFDVPLHYNLFQASQEG
KNYDLQNILKNTLVGHHCDLAVTFVDNHDSQSGSSLESQIEDWFKPLAYGLILLIKDGYPCLFYGDYYGVKGENS
PHTQIINILLDARRKYAYGDQIEYFDHPSAIGFIRTGDEEHVGSGLVFLMSNDEAGSKKMDLGEEHKGEIWHEIT
GNIQQEITLDEKGSGEFSVNTRNIAVWIKKN

Literature:

1. Cerdeno-Tarraga *et al.* (2005) *Science* **307**, 1463-1465

2. Miller (1959) *Anal. Chem.* **31**, 426-428