

Recombinant Enzyme Product Specification Sheet

Cat. No.:	PRO-E0403	add this product to cart
LOT:	2009-0403	view other α-amylases
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 subf28, glycoside hydrolase family 13 subfamily 28, member of clan GH-H], AmyE, AmyA; BSU03040	
Source organism:	<i>Bacillus subtilis</i> subsp. <i>subtilis</i> str. 168	
Enzyme Commission No.:	3.2.1.1	
Activity:	39512 U/mL	} (37°C; pH 7.0; 6.25 mg/mL soluble starch)
Specific activity:	4449.5 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:	≥ 37°C (this enzyme has not been assayed at a temperature in excess of 37°C. At 25°C this preparation has an activity of 19978 U/mL and a specific activity of 2250 U/mg)	
[Protein]:	8.88 mg/mL	
Sequence length:	627 amino acids (view sequence)	
Accession No.:	P00691 , NP_388186.1 , BG10473 , BSUB224308:BSU0305-MON	
Molecular weight:	72550.6 Da	(theoretical)
	-	(observed by SDS-PAGE)
	-	(observed by mass spectrometry)
Biological function:	Endohydrolysis of (1→4)- α -D-glucosidic linkages in polysaccharides containing three or more (1→4)- α -linked D-glucose units	
Potential application(s):	Carbohydrate research , fundamental research	

- Comments:** PDB: **1BAG**, **1UA7**. Acts on starch, glycogen and related polysaccharides and oligosaccharides in a random manner; reducing groups are liberated in the α -configuration
- 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 μ mol 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 H₂O) in 31.25 mM sodium phosphate buffer pH 7.0, containing 0.625 mg/mL BSA, at 37°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:

METANKSNELTAPSIKSGTILHAWNWSFNTLKHNMKDIHDAGYTAIQTSPINQVKEGNQGDKSMSNWWYLYQPTS
YQIGNRYLGTEQEFKEMCAAAEEYGIKVIIVDAVINHTTSDYAAISNEVKSIPNWITHGNTQIKNWSDRWDVTQNSL
LGLYDWNTQNTQVQSYLKRFLDRALNDGADGFRFDDAAKHIELPDDGSYGSQFWPNIINTSAEFQYGEIILQDSASR
DAAYANYMDVTASNYGHSIRSALKNRNLGVSNI SHYASDVSAADKLVTVVESHDTYANDDEESTWMSDDDIRLGWA
VIASRSGSTPLFFSRPEGGGNGVRFPGKSQIGDRGSALFEDQAITAVNRFHNV MAGQPEELSNPNNGNNQIFMNQR
GSHGVVLANAGSSSVSINTATKLPDGRYDNKAGAGSFQVNDGKLTGTINARSVAVLYPDDIAKAPHVFLENYKTG
VTHSFNDQLTITLRADANTTKAVYQINNGPETAFKDGQFTIGKGDPPFGKTYT IMLKGTNSDGVTRTEKYSFVKR
DPASAKTIGYQNPNHWSQVNAYIYKHDGSRVIELTGSWPGKPMTKNADGIYTLTLPADTDTTNAKVI FNNGSAQV
PGQNQPGFDYVLNGLYND SGLSGLSPH

- Literature:**
1. Mäntsälä and Zalkin (1979) *J. Biol. Chem.* **254**, 333-340
 2. Fujimoto *et al.* (1998) *J. Mol. Biol.* **277**, 393-407
 3. Miller (1959) *Anal. Chem.* **31**, 426-428