

Recombinant Enzyme Product Specification Sheet

Cat. No.:	PRO-E0409	add this product to cart
LOT:	2009-0409	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 subf5, glycoside hydrolase family 13 subfamily 5, member of clan GH-H], cytoplasmic α -amylase, amyA, yedC, b1927, JW1912	
Source organism:	<i>Escherichia coli</i> str. K-12 substr. W3110	
Enzyme Commission No.:	3.2.1.1	
Activity:	158 U/mL	} (37°C; pH 7.0; 6.25 mg/mL soluble starch)
Specific activity:	23.61 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:	$\geq 37^\circ\text{C}$ (this enzyme has not been assayed at a temperature in excess of 37°C. At 25°C this preparation has an activity of 55.5 U/mL and a specific activity of 8.28 U/mg)	
[Protein]:	6.70 mg/mL	
Sequence length:	495 amino acids (view sequence)	
Accession No.:	P26612 , NP_416437.1 , EG11387 , ALPHA-AMYL-CYTO-MON	
Molecular weight:	60459.5 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
- 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 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:

MRNPTLLQCFHWYYPEGGKLWPELAERADGFNDIGINMVWLPPAYK GASGGYSVGYDSYDLFDLGEFDQKGS IPT
KYGDKAQLLAAIDALKRNDIAVLLDVVVNHKMGADKEKAIRVQRVNADDRTQIDEEIECEGWTRYTFPARAGQY
SQFIWDFKCFSGIDHIENPDEDGIFKIVNDYTGGWNDQVDELGNFDYLMGENIDFRNHAVTEEIKYWARWVME
QTQCDGFRLDAVKHIPAWFYKEWIEHVQEVAPKPLFIVAEYWSHEVDKLTQYIDQVEGKTMFLDAPLQMKFHEAS
RMGRDYDMTQIFTGTLVEADPFHAVTLVANHDTQPLQALEAPVEPWFKPLAYALILLRENGVPSVFPDLYGAHY
EDVGGDGQTYPIDMPIIEQLDELILARQRFAGVQTLFFDHPNCIAFSRSGTDEFPGCVVVM SNGDDGEKTIHLG
ENYGNKTWRDFLGNRQERVVTDENGEATFFCNGGSVSVWVIEEVI

- Literature:**
1. Raha *et al.* (1992) *J. Bacteriol.* **174**, 6644-6652
 2. Miller (1959) *Anal. Chem.* **31**, 426-428