

Recombinant Enzyme Product Specification Sheet

Cat. No.:	PRO-E0401	add this product to cart
LOT:	2009-0401	
Activity:	Pullulanase	view all pullulanases
Synonyms:	Pullulan 6- α -glucanohydrolase; limit dextrinase (erroneous); amylopectin 6-glucanohydrolase; bacterial debranching enzyme; debranching enzyme; α -dextrin endo-1,6- α -glucosidase; R-enzyme; pullulan α -1,6-glucanohydrolase	
Nomenclature:	CAZy [GH13 subf14, glycoside hydrolase family 13 subfamily 14, member of clan GH-H], amyX, BSU29930	
Source organism:	<i>Bacillus subtilis</i> subsp. <i>subtilis</i> str. 168	
Enzyme Commission No.:	3.2.1.41	
Activity:	558.77 U/mL	} (37°C; pH 5.0; 9.04 mg/mL soluble starch)
Specific activity:	84.66 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:	~ 5.0	
Temperature optimum:	$\geq 37^\circ\text{C}$	
[Protein]:	6.60 mg/mL	
Sequence length:	718 amino acids (view sequence)	
Accession No.:	O34587 , NP_390871.1 , AAC00283.1 , BSUB224308:BSU2989-MON	
Molecular weight:	84420.4 Da	(theoretical)
	-	(observed by SDS-PAGE)
	-	(observed by mass spectrometry)
Biological function:	Catalyses the hydrolysis of (1 \rightarrow 6)- α -D-glucosidic linkages in pullulan, amylopectin and glycogen, and in the α - and β -limit dextrins of amylopectin and glycogen. See also EC 3.2.1.33 and EC 2.4.1.25	
Potential application(s):	Carbohydrate research , fundamental research	
Comments:	PDB: 2E8Y , 2E8Z , 2E9B . Different to limit dextrinase (EC 3.2.1.142)	

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 (9.04 mg/mL; Sigma S-9765; ACS reagent; solubilised by boiling for 5 min in H_2O) in 22.59 mM sodium acetate buffer, pH 5.0, containing 0.452 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:

MVSIIRRSFEAYVDDMNIITVLI PAEQKEIMT PPFRL ETEITDF PLAVREEYSLEAKYKYVCVSDHPVTFGKIHCVRASSGHKTDLQIGAVIRTAAFDDEFYYD GELGAVYTADHTVFKVWAPAATSAAVKLSHPNKSGRTFQMTRLEKGYAVTVTGDLHGYEYLF C ICNNSEW METVDQYAKAVTVNGEKGVVLRPDQMKWTAPLKPFSHPVDAVIYETHLRDFS IHENSGMINKGKYLAL TETDTQTANGSS SGLAYVKELGVTHVELLPVND FAGVDEEKPLDAYNWGYNPLHFFAP EGSYASNP HDPQTRKTELKQ MINTLHQHGLR VIL DVVFNHVKRENSPF EKTVPGYFFRHDECGMP SNGTGVGND IASERRMARKFIADCVVYWLEEYNVDGFRFDLLGILDIDTVLYMKEKATKAKPGILLFGEGWDLATPLPHEQKAA LANAPRMPGIGFFNDMFRDAVKGNTFHLKATGFALNGES AQAVMHGIAGSSGWKALAPIVPEPSQSIN YVESHD NHTFWDKMSFALPQENDSRKRSRQRLAVAI ILLAQGV PFIHSGQEFFR TKQGVENSYQSSDSINQLDWRRET FK EDVHYIRRLISLRKAHPAFLR LSAADIQRHLECLTLKEHLIAYRLYDLDEVDEWKDIIVIH HASPDSVEWRLPND IPYRLLCDPSGFGQEDPTEIKKTVAVNGIGTVILYLASDLKSFA

Literature: 1. [Kunst et al. \(1997\) Nature 390, 249-256](#)