

Recombinant Enzyme Product Specification Sheet

Cat. No.:	PRO-E0406	add this product to cart
LOT:	2009-0406	view all branching enzymes
Activity:	1,4- α -Glucan branching enzyme	
Synonyms:	Branching enzyme, amylo-(1,4 \rightarrow 1,6)-transglycosylase; Q-enzyme; α -glucan-branching glycosyltransferase; amylose isomerase; enzymatic branching factor; branching glycosyltransferase; enzyme Q; glucosan transglycosylase; glycogen branching enzyme; plant branching enzyme; α -1,4-glucan: α -1,4-glucan-6-glycosyltransferase; starch branching enzyme; 1,4- α -D-glucan:1,4- α -D-glucan 6- α -D-(1,4- α -D-glucano)-transferase	
Nomenclature:	CAZy [GH13 subf9, glycoside hydrolase family 13 subfamily 9, member of clan GH-H]	
Source organism:	<i>Escherichia coli</i> str. K-12 substr. W3110	
Enzyme Commission No.:	2.4.1.18	
Activity:	45.58 U/mL	} (37°C; pH 7.5; 3.3 mg/mL starch)
Specific activity:	15.44 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:	-	
[Protein]:	2.952 mg/mL	
Sequence length:	728 amino acids (view sequence)	
Accession No.:	BAE77860	
Molecular weight:	88157.0 Da	(theoretical)
	~ 90000 Da	(observed by SDS-PAGE)
	-	(observed by mass spectrometry)
Biological function:	Transfers a segment of a (1 \rightarrow 4)- α -D-glucan chain to a primary hydroxy group in a similar glucan chain	
Potential application(s):	Carbohydrate research , fundamental research	

- Comments:** Converts amylose into amylopectin. The description (official name) requires a qualification depending on the product, glycogen or amylopectin, e.g. glycogen branching enzyme, amylopectin branching enzyme. The latter has frequently been termed Q-enzyme
- Usage:** Agitate bottle sufficiently to fully homogenise enzyme precipitate before use. Dilute in 50 mM sodium phosphate buffer, pH 7.5, containing 2 mg/mL BSA. **Do not dilute in water**
- Assay:** One unit is defined as the amount of enzyme required to cause a fall of 1.0 absorbance units, where the reaction mixture comprises 3.33 mg/mL starch (Sigma; S-9765) in 41.7 mM sodium phosphate buffer, pH 7.5, and where 0.24 mL of the reaction mixture is withdrawn at each time point, and mixed with 1.0 mL of deionised water and 0.2 mL of iodine reagent immediately prior to reading at 660 nm

Primary sequence:

MSDRIDRDVINALIAGHFADPFVSLGMHKTTAGLEVRALLPDATDVWVIEPKTGRKLAKLECLDSRGGFFSGVPIPR
RKNFFRYQLAVVWHGQQNLIDDPYRFGPLIQEMDAWLLSEGTHLRPYETLGHAHADTMDGVTGTRFSVWAPNARRV
SVVGQFNWYDGRHRHPMLRKRKESGIWELFIPGAHNGQLYKYEMIDANGNLRKSDPYAFEAQMRPETASLICGLPE
KVVQTEERKKANQFDAPISIEVHVLGSWRRHTDNNFWLSYRELADQLVPYAKWMGFTHLELLPINEHPFDGWSGY
QPTGLYAPTRRFGRDDEFYFIDAHAAGLNVILDWVPGHFPTDDFALAEFDGNTLYEHSDPREGYHQDWNTLIY
NYGRREVSNFLVGNALYWIERFGIDALRVDASMIYRDYSRKEGEWIPNEFGGRENLEAIEFLRNTNRIILGEQV
SGAVTMAEESTDFPGVSRPQDMGGLGFYKWNLGWMHDTLDYMKLDPVYRQYHHDKLTFGILYNYTENFVLPLSH
DEVVHGKKSILDRMPGDAWQKFANLRAYYGMMWAFPGKLLFMGNEFAQGREWNHDASLDWHLLEGGDNWHHGVO
RLVRDLNLTyrHHKAMHELDfDPYGFewLVVDDKERSVLI fVRRDKEGNEI IVASNfTPVPRHDYrFGINQPGKW
REILNTDsmHYHGSNAGNGGTVHsDEIASHGRQHSLSLTLPPLATIwLVREAE

- Literature:** 1. [Hayashi et al. \(2006\) Mol. Syst. Biol. 2, 1-5](#)