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Recombinant Enzyme Product Specification Sheet

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Cat. No.:	PRO-E0413
LOT:	2010-0413-2
Activity:	1,4-α-Glucan branching enzyme
Synonyms:	Branching enzyme; amylo-(1,4→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 subf8, glycoside hydrolase family 13 subfamily 8, member of clan GH-H], BF2338, GlgB
Source organism:	*Bacteroides fragilis* NCTC 9343
Enzyme Commission No.:	2.4.1.18
Activity:	330.14 U/mL (37°C; pH 7.5; 3.3 mg/mL starch)
Specific activity:	50.88 U/mg
Purity:	~ 95 % as judged by SDS-PAGE
Form and storage:	Supplied in 3.2 M ammonium sulphate, containing 0.5 M imidazole and 0.5 M NaCl, pH ~ 6.8. Store at 4°C (shipped at room temperature)
pH optimum:	~ 7.0
Temperature optimum:	≥ 37°C
[Protein]:	6.49 mg/mL
Sequence length:	670 amino acids (view sequence)
Accession No.:	Q5LCX9, YP_211960.1, CAH08034.1, BFRA272559:BF2338-MON
Molecular weight:	81104.6 Da (theoretical)
	- (observed by SDS-PAGE)
	- (observed by mass spectrometry)
Biological function:	May be involved in glycogen biosynthesis.
Potential application(s):	Carbohydrate research, fundamental research

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Comments: This is a cytoplasmic enzyme

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

Assay: One unit is defined as the amount of enzyme required to cause a fall of 1.0 absorbance unit per minute, where the reaction mixture comprises 3.33 mg/mL starch (Sigma; S-9765; boiled for 5 min prior to use to fully solubilise) in 41.7 mM sodium phosphate buffer, pH 7.5, containing 0.69 mg/mL BSA and 173.6 mM sodium chloride, and where 0.050 mL of the reaction mixture (boiled for 5 min to inactivate the enzyme) is mixed with 1.0 mL iodine reagent (0.5 mg/mL iodine and 1 mg/mL potassium iodide in water) prior to reading at 660 nm.

NOTE: due to the nature of the assay, it is important to monitor the initial reaction rate, over the first 2 min of the reaction

Primary sequence:

MEKTLNLIKNDPWLEPYKDAIVGRFEHAMDKKAELTNGGKSTLSDFASGYLYFGLHRTDKGWIFREWAPNASHIY
MVGTFSNWEEKPAYKLKRLKNGSWEIKLPIDTIQHGDLYKLHVYWEGGQGERIPAWANRVVQDDNTKIFSAQVWA
PEKPFKFKKKTFKPSTDPLLIYECHIGMAQQEEKVGTYNEFREKILPRIAKEGYNCIQIMAIQEHPYYGSFGYHV
SSFFAASSRFGTPEELKQLIDTAHGLGIAVIMDIVHSHAVKNEVEGLGNFAGDPNQYFYPGGRREHPAWDSLCFD
YGKNEVMHFLLSNCKYWLEEYHFDGFRFDGVTSMLYYSHGLGEAFCNYGDYFNGHQDDNAICYLTLANELIHEVN
PKAITIAEEVSGMPGLAAKVEDGGYGFDYRMAMNIPDYWIKTIKEKIDEDWKPSSMFWEVTNRRQDEKTISYAES
HDQALVGDKTIIFRLIDADMYWHMQKGDENYIVHRGVALHKMIRLLTASTINGGYLNFMGNEFGHPEWIDFPREG
NGWSCKYARRQWDLVDNKNLTYHYLGDFDADMLKVIKSVKNIQQTPVQEIWHNDGDQVLAYQRKDLVFVFNFNPS
QSFTDYGFLVTPGTYEVVLNTDNIIYGGNGLSDDSVKHFTLPDPLYKKEKKEWLKLYIPARTAMVLRRTK

Literature:

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