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Recombinant Enzyme Product Specification Sheet

Cat. No.:	PRO-E0355
LOT:	2012-0355-1
Activity:	Feruloyl esterase
Synonyms:	Ferulic acid esterase; hydroxycinnamoyl esterase; FAE-III; cinnamoyl ester hydrolase; FAEA; cinnAE; FAE-I; FAE-II; 4-hydroxy-3-methoxycinnamoyl-sugar hydrolase
Nomenclature:	CAZy [CE1, carbohydrate esterase family 1]
Source organism:	*Clostridium thermocellum* DSM 1313
Enzyme Commission No.:	3.1.1.73
Activity:	1.501 U/mL (37°C; pH 6.5; 187 µM methyl ferulate)
Specific activity:	0.453 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
[Protein]:	3.317 mg/mL
Sequence length:	261 amino acids (view sequence)
Accession No.:	E6UT93
Molecular weight:	32092.0 Da (theoretical)
	~ 30000 Da (observed by SDS-PAGE)
	- (observed by mass spectrometry)
Biological function:	Likely to hydrolyse natural esters such as FAXX, FAX3 and PAX3. Feruloyl-polysaccharide + H_2O = ferulate + polysaccharide
Potential application(s):	Biomass conversion, carbohydrate research
Comments:	This esterase is the N-terminal CE1 catalytic module of modular enzyme also containing a C-terminal CBM6 module and dockerin sequences. All microbial ferulate esterases are secreted into the culture medium. They are sometimes called hemicellulase accessory enzymes, since they help xylanases and pectinases to break down plant cell wall hemicellulose

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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 ferulic acid per minute from 0.187 mM methyl ferulate in 50 mM sodium phosphate buffer, pH 6.5, at 37°C, and at 335 nm, and using a molar extinction coefficient of 14000 M^{-1} cm^{-1}.

Primary sequence:

AASLPTMPPSGYDQVRGGIQRGQVVNISYYSTATNGTRPAKVYLPPGYSTSKRYSVLYLLHGIGGSEGDWFADWG
GRASIIADNLIAEGKIKPLIIVTPNTNAAGPGIGDGYENFTKDLINCLIPYIESRYSVYTDREHRAIAGLSMGGG
QSFNIGLTNLDKFAYIGPISSAPNTYPNNRLFPDGGAAARQKLKLLFIACGTNDSLIGFGQRVHEFCVANNINHI
YWLIQGGGHDYNVWKAGLWNFLQLAEQAGLTDYNAP

Literature: -