

## Recombinant Enzyme Product Specification Sheet

<b>Cat. No.:</b>	PRO-E0017
<b>LOT:</b>	2008-0017
<b>Activity:</b>	Licheninase
<b>Synonyms:</b>	Lichenase; $\beta$ -(1 $\rightarrow$ 4)-D-glucan 4-glucanohydrolase; 1,3;1,4- $\beta$ -glucan endohydrolase; 1,3;1,4- $\beta$ -glucan 4-glucanohydrolase; 1,3-1,4- $\beta$ -D-glucan 4-glucanohydrolase; (1 $\rightarrow$ 3)-(1 $\rightarrow$ 4)- $\beta$ -D-glucan 4-glucanohydrolase; beta-(1 $\rightarrow$ 4)-D-glucan 4-glucanohydrolase; 1,3;1,4-beta-glucan endohydrolase; 1,3;1,4-beta-glucan 4-glucanohydrolase; 1,3-1,4-beta-D-glucan 4-glucanohydrolase; (1 $\rightarrow$ 3)-(1 $\rightarrow$ 4)-beta-D-glucan 4-glucanohydrolase
<b>Nomenclature:</b>	CAZy [GH26, glycoside hydrolase family 26, member of clan GH-A]
<b>Source organism:</b>	<i>Clostridium thermocellum</i> NCIB 10682
<b>Enzyme Commission No.:</b>	3.2.1.73
<b>Activity:</b>	2100 U/mL
<b>Specific activity:</b>	700 U/mg
	} (60°C; pH 7; barley $\beta$ -glucan)
<b>Purity:</b>	> 95 % as judged by SDS-PAGE
<b>Form and storage:</b>	Supplied in 3.2 M ammonium sulphate, store at 4°C (shipped at room temperature)
<b>pH optimum:</b>	7 (stable from 6 - 8)
<b>Temperature optimum:</b>	60°C (stable up to 65°C)
<b>[Protein]:</b>	3 mg/mL
<b>Sequence length:</b>	276 amino acids ( <a href="#">view sequence</a> )
<b>Accession No.:</b>	AAA23225
<b>Molecular weight:</b>	32517.1 Da (theoretical)
	~ 32700 Da (observed by SDS-PAGE)
	- (observed by mass spectrometry)
<b>Biological function:</b>	Catalyses the hydrolysis of (1 $\rightarrow$ 4)- $\beta$ -D-glucosidic linkages in $\beta$ -D-glucans containing (1 $\rightarrow$ 3)- and (1 $\rightarrow$ 4)-bonds
<b>Potential application(s):</b>	Biomass conversion, carbohydrate research
<b>Comments:</b>	Does not hydrolyse $\beta$ -D-glucans containing only 1,3- or 1,4-bonds

**Usage:** Agitate bottle sufficiently to fully homogenise enzyme precipitate before use

**Assay:** One unit is defined as the amount of enzyme required to release 1  $\mu\text{mol}$  of glucose-reducing-sugar equivalents per minute from barley  $\beta$ -glucan in 50 mM phosphate buffer, pH 7.0, at 60°C, where reducing sugars are measured by the method of Miller (1959; *Anal. Chem.* **31**, 426-428)

**Primary sequence:**

MLKIGAWVGTQPSESAIKSFQELQGRKLDIVHQFINWSTDFSWVRPYADAVYNNNGSILMITWEPWEYN  
TVDIKNGKADAYITRMAQDMKAYGKEIWLRLPLHEANGDWYPWAIGYSSRVNTNETYIAAFRHIVDIFR  
ANGATNVKWFVNVNCDNVGNGTSLGHYPGDNYVDYTSIDGYNWGTTSQSWGQWQSFQVFSRAYQAL  
ASINKPIIIAEFASAEIGGNKARWITEAYNSIRTSYNKVIAAVWFHENKETDWRINSSPEALAAAYREA  
IGAG

**Literature:** 1. [Taylor et al. \(2005\) J. Biol. Chem. 280, 32761-32767](#)