CELLOBIOHYDROLASE I (CBH I) from *Trichoderma* sp. (Lot 40203d)

E-CBHI **02/19**

(EC 3.2.1.176) cellulose 1,4-beta-cellobiosidase (non-reducing end)
CAZy Family: GH7
CAS: 37329-65-0

PROPERTIES

1. ELECTROPHORETIC PURITY:

- Single band on SDS-gel electrophoresis (MW = 65,000)

2. SPECIFIC ACTIVITY:

0.108 U/mg protein (on CM-cellulose) at pH 4.5 and 40°C

One Unit of cellobiohydrolase activity is defined as the amount of enzyme required to release one µmole of glucose-reducing-sugar equivalents per minute from CM-cellulose (10mg/mL) in sodium acetate buffer (100 mM), pH 4.5 and 40°C.

3. SPECIFICITY:

Hydrolysis of (1,4)-β-D-glucosidic linkages in cellulose and cellotetraose, releasing cellobiose from the non-reducing ends of the chains. Also active on pNP β-lactoside and pNP β-cellobioside

4. RELATIVE RATES OF HYDROLYSIS OF SUBSTRATES:

Substrate	U/mg	%
CMC-4M	0.108	100
p-Nitrophenyl β-lactoside	0.050	46.3
p-Nitrophenyl β-cellobioside	0.0074	6.9
Cellazyme C Tablets	< 0.005	<4.6
p-Nitrophenyl β-D-Glucopyranoside	< 0.003	<2.8

Action on *p*NP-substrates and polysaccharides or oligosaccharides was determined at a final substrate concentration of 2.5 mM and 5 mg/mL, respectively, in sodium acetate buffer (100 mM), pH 4.5 at 40°C.

5. PHYSICOCHEMICAL PROPERTIES:

pH Optima:	4.5 - 5.0
pH Stability:	2.5 - 6.5
Temperature Optima:	70°C
Temperature Stability:	< 65°C

6. STORAGE CONDITIONS:

The enzyme is supplied as an ammonium sulphate suspension containing 0.02% sodium azide and should be stored at 4°C. For assay, this enzyme should be diluted in sodium acetate buffer (100 mM), pH 4.5 containing 1 mg/mL BSA. On dilution in buffer or water, the enzyme should be stored in the frozen state between use. **Swirl to mix the enzyme immediately prior to use.**

7. REFERENCE:

Claeyssens, M. and Aerts, G. (1992) "Characterisation of cellilolytic activities in commercial *Trichoderma reesei* preparations: An approach using small, chromogenic substrates. **Bioresource Technology, 39**, 143-146.

Figure 1. **SDS-PAGE analysis of typical preparation of Cellobiohydrolase I (CBH I) (*Trichoderma longibrachiatum*)**
Electrophoresis was performed using a 9% acrylamide gel. Lane 1, low molecular weight markers (Sigma cat. no. M-3918); lane 2, 5µg CBH II; Lane 3, high molecular weight markers (Sigma cat. no. M-3788); Lane 4, 2µg CBH I; Lane 5, low molecular weight markers (Sigma cat. no. M-3918); Lane 6, 4µg CBH I; Lane 7, high molecular weight markers (Sigma cat. no. M-3788).