



## CELLULASE (*endo*-1,4- $\beta$ -D-glucanase) from *A. niger* (Lot I30503a)

### E-CELAN

(EC 3.2.1.4) 4-beta-D-glucan 4-glucanohydrolase

CAZy Family: GH12

CAS: 9012-58-4

02/17

### PROPERTIES

#### 1. ELECTROPHORETIC PURITY:

- Single band on SDS-gel electrophoresis (MW = 27,000)
- Single major band on isoelectric focusing (pI = 4.55)

#### 2. SPECIFIC ACTIVITY:

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

**One Unit** of *endo*-cellulase is defined as the amount of enzyme required to release one  $\mu$ mole of glucose per minute from CM-cellulose (10 mg/mL) in sodium acetate buffer (100 mM), pH 4.5 at 40°C.

#### 3. SPECIFICITY:

*endo*-hydrolysis of (1,4)- $\beta$ -D-glucosidic linkages in cellulose.

#### 4. RELATIVE RATES OF HYDROLYSIS OF SUBSTRATES:

Substrate	%
CM-Cellulose 4M	100
Barley $\beta$ -Glucan	144
Konjac Glucomannan	0.11
Xyloglucan (Tamarind)	0.03
Carob Galactomannan	< 0.019
CM-Pachyman	< 0.013
Starch	< 0.037
pNP- $\alpha$ -Glucoside	< 0.0013
pNP- $\beta$ -Glucoside	< 0.0013
pNP- $\beta$ -Xyloside	< 0.0003

Action on pNP-substrates and polysaccharides or oligosaccharides was determined at a final substrate concentration of 10 mM and 10 mg/mL, respectively, in sodium acetate buffer (100 mM), pH 4.5 at 40°C.

#### 5. PHYSICOCHEMICAL PROPERTIES:

pH Optima: 4.5  
pH Stability: 4.0-10.0  
Temperature Optima: 60°C  
Temperature Stability: < 50°C

#### 6. STORAGE CONDITIONS:

The enzyme is supplied as a crystalline suspension in 3.2 M ammonium sulphate and 0.02% (w/v) 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 0.5 mg/mL BSA. **Swirl to mix the enzyme immediately prior to use.**