

## CELLULASE (*endo*-1,4- $\beta$ -D-glucanase) (*Aspergillus niger*) (Lot 101103A)

### **Non-recombinant**

#### **E-CELAN**

11/22

EC: 3.2.1.4

Synonyms: cellulase; 4-beta-D-glucan 4-glucanohydrolase

CAZy Family: GH12

CAS: 9012-58-4

### **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:**

**60 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	164
Konjac Glucomannan	0.19
Xyloglucan (Tamarind)	0.02
Carob Galactomannan	< 0.02
CM-Pachyman	< 0.01
Starch	< 0.02
<i>p</i> NP- $\alpha$ -Glucoside	< 0.004
<i>p</i> NP- $\beta$ -Glucoside	< 0.0003
<i>p</i> NP- $\beta$ -Xyloside	< 0.0003

Action on *p*NP-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.