CELLULASE (*endo*-1,4-β-D-glucanase) from *A. niger* (Lot 130503b)

E-CELAN **08/19**

(EC 3.2.1.4) 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:

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 µmole 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)-β-D-glucosidic linkages in cellulose.

4. RELATIVE RATES OF HYDROLYSIS OF SUBSTRATES:

Substrate	%
CM-Cellulose 4M	100
Barley β-Glucan	144
Konjac Glucomannan	0.11
Xyloglucan (Tamarind)	0.03
Carob Galactomannan	< 0.019
CM-Pachyman	< 0.013
Starch	< 0.037
*p*NP-α-Glucoside	< 0.0013
*p*NP-β-Glucoside	< 0.0013
*p*NP-β-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.**