**CELLULASE (endo β-GLUCANASE) from Talaromyces emersonii (Lot 170703b)**

**E-CELTE**
(formerly Penicillium emersonii) 03/19

(EC 3.2.1.4) 4-beta-D-glucan 4-glucanohydrolase
CAZy Family: GH5
CAS: 9012-54-8

**PROPERTIES**

1. **ELECTROPHORETIC PURITY:**
   - Single band on SDS-gel electrophoresis (MW ~ 37,000 and 47,200)
   - Two major bands on isoelectric focusing (pl ~ 3.4 and 3.6)

2. **SPECIFIC ACTIVITY:**
   70 U/mg protein (on CM-Cellulose) at pH 4.5 and 40°C
   **One Unit** of cellulase activity is defined as the amount of enzyme required to release one μmole of glucose reducing-sugar equivalents per minute from CM-Cellulose 4M (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:**

<table>
<thead>
<tr>
<th>Substrate</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>CM-Cellulose 4M</td>
<td>100</td>
</tr>
<tr>
<td>Barley β-Glucan</td>
<td>72</td>
</tr>
<tr>
<td>Xyloglucan (Tamarind)</td>
<td>0.212</td>
</tr>
<tr>
<td>Wheat Arabinoyl xylan</td>
<td>0.410</td>
</tr>
<tr>
<td>Carob Galactomannan</td>
<td>0.159</td>
</tr>
<tr>
<td>Ceralpha Reagent</td>
<td>0.010</td>
</tr>
<tr>
<td>p-NP-α-Glucoside</td>
<td>&lt;0.00051</td>
</tr>
<tr>
<td>p-NP-β-Glucoside</td>
<td>0.0039</td>
</tr>
</tbody>
</table>

Action on pNP-substrates and polysaccharides or oligosaccharides was determined at a final substrate concentration of 5 mM and 10 mg/mL, respectively, in sodium acetate buffer (100 mM), pH 4.5 at 40°C.

5. **PHYSICOCHEMICAL PROPERTIES:**
   Recommended conditions of use are at pH 4.5-5.5 and up to 80°C
   - pH Optima: 4.5-5.5
   - pH Stability: 3.0-9.0 (> 75% control activity after 16h at 4°C)
   - Temperature Optima: 80°C (10 min reaction)
   - Temperature Stability: > 80%

6. **STORAGE CONDITIONS:**
   The enzyme is supplied as an ammonium sulphate suspension containing 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 1 mg/mL BSA. **Swirl to mix the enzyme immediately prior to use.**
7. EXPERIMENTAL DATA:

- **pH Optima**
  - Relative activity (%) vs pH

- **pH Stability**
  - Relative activity (%) vs pH

- **Thermal Optima**
  - Relative activity (%) vs Temperature (°C)

- **Thermal Stability**
  - Relative activity (%) vs Temperature (°C)