LICHENASE from Bacillus subtilis (Lot 150101c)

Non-recombinant

E-LICHN
(EC 3.2.1.73)
Synonyms: licheninase, (1->3)-(1->4)-beta-D-glucan 4-glucanohydrolase
CAZy Family: GH16
CAS: 37288-51-0

PROPERTIES

1. ELECTROPHORETIC PURITY:
   - Single band on SDS-gel electrophoresis (MW ~ 26,750)
   - One major band on isoelectric focusing (pI ~9.0), two minor bands (pI ~8.6 and ~8.7)

2. SPECIFIC ACTIVITY:
   250 U/mg protein (on barley β-glucan) at pH 6.5 and 40°C
   One Unit of lichenase activity is defined as the amount of enzyme required to release one μmole of glucose reducing-sugar equivalents per minute from barley β-glucan (10 mg/mL) in sodium phosphate buffer (100mM), pH 6.5 at 40°C

3. SPECIFICITY:
   Hydrolysis of (1,4)-β-D-glucosidic linkages in β-D-glucans containing (1,3)- and (1,4)-bonds.

4. RELATIVE RATES OF HYDROLYSIS OF SUBSTRATES:

<table>
<thead>
<tr>
<th>Substrate</th>
<th>%</th>
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</thead>
<tbody>
<tr>
<td>Barley β-glucan</td>
<td>100</td>
</tr>
<tr>
<td>CM-Cellulose</td>
<td>&lt;0.00006</td>
</tr>
<tr>
<td>pNP-β-glucoside</td>
<td>&lt;0.00002</td>
</tr>
<tr>
<td>Blocked 4-nitrophenyl-α-maltoheptaoside (Ceralpha Reagent)</td>
<td>&lt;0.000008</td>
</tr>
<tr>
<td>CM-Pachyman</td>
<td>&lt;0.000002</td>
</tr>
<tr>
<td>p-Nitrophenyl β-D-maltoside (AMG Reagent)</td>
<td>&lt;0.000001</td>
</tr>
</tbody>
</table>

Action on pNP-substrates and polysaccharides or oligosaccharides was determined at a final substrate concentration of 2.5 mM and 5 mg/mL, respectively, in sodium phosphate buffer (100 mM), pH 6.5 at 40°C.

5. PHYSICOCHEMICAL PROPERTIES:
   Recommended conditions of use are at pH 6.0-6.5 and up to 60°C
   pH Optima: 6.0
   pH Stability: 3.0-9.0 (> 75% control activity after 24 h at 4°C)
   Temperature Optima: 60°C (10 min reaction)
   Temperature Stability: up to 60°C (> 75% control activity after 15 min incubation at temperature)

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 phosphate buffer (100 mM), pH 6.5 containing 1 mg/mL BSA. **Swirl to mix the enzyme immediately prior to use.**
7. EXPERIMENTAL DATA:

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

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

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

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