α-GLUCOSIDASE (Maltase from Yeast) (Lot 190301)

E-MALTS
(EC 3.2.1.20) alpha-glucosidase; alpha-D-glucoside glucohydrolase
CAZy Family: GH13
CAS: 9001-42-7

PROPERTIES

1. ELECTROPHORETIC PURITY:
   - Single band on SDS-gel electrophoresis (MW ~ 52,000)
   - One major band on isoelectric focusing (pI ~ 5.7)

2. SPECIFIC ACTIVITY:
   129 U/mg protein (on pNP-α-glucopyranoside) at pH 6.8 and 40°C
   One Unit of α-glucosidase activity is defined as the amount of enzyme required to produce one μmole of p-nitrophenol from pNP-α-glucopyranoside (10 mM) in sodium maleate buffer (100 mM), pH 6.8 at 40°C.

3. SPECIFICITY:
   Hydrolysis of terminal, non-reducing (1,4)-linked α-D-glucose residues with release of D-glucose

4. RELATIVE RATES OF HYDROLYSIS OF SUBSTRATES:

<table>
<thead>
<tr>
<th>Substrate</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>pNP-α-Glucoside</td>
<td>100.0</td>
</tr>
<tr>
<td>Maltose</td>
<td>15.7</td>
</tr>
<tr>
<td>Sucrose</td>
<td>16.6</td>
</tr>
<tr>
<td>pNP-β-Glucosidase</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>pNP-α-Galactoside</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>pNP-β-Galactoside</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Blocked pNP-Maltoheptoside (Ceralpha reagent)</td>
<td>&lt; 0.001</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 maleate buffer (100 mM), pH 6.8 at 40°C.

5. PHYSICOCHEMICAL PROPERTIES:
   Recommended conditions of use are at pH 6.0-7.0 and up to 40°C
   pH Optima: 6.8
   pH Stability: 5.0-7.0
   Temperature Optima: 40°C
   Temperature Stability: up to 40°C

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 maleate buffer (100 mM), pH 6.8 containing 1 mg/mL BSA. **Swirl to mix the enzyme immediately prior to use.**