**β-GALACTOSIDASE from Aspergillus niger** (Lot 151202a)

E-BGLAN
(EC 3.2.1.23) beta-D-galactoside galactohydrolase
CAZy Family: GH35
CAS: 9031-11-2

**PROPERTIES**

1. **ELECTROPHORETIC PURITY:**
   - Single band on SDS-gel electrophoresis (MW ~ )
   - Single band on isoelectric focusing.

2. **SPECIFIC ACTIVITY:**
   170 U/mg protein (on p-nitrophenyl-β-D-galactoside) at pH 4.5 and 40°C
   
   **One Unit** of β-galactosidase activity is defined as the amount of enzyme required to release one µmole of
   p-nitrophenol per minute from p-nitrophenyl-β-D-galactoside (10 mM) in sodium acetate buffer (100 mM),
   pH 4.5 at 40°C.

3. **SPECIFICITY:**
   Hydrolysis of terminal non-reducing β-D-galactose residues in β-D-galactosides.

4. **RELATIVE RATES OF HYDROLYSIS OF SUBSTRATES:**

<table>
<thead>
<tr>
<th>Substrate</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>pNP-β-galactoside</td>
<td>100</td>
</tr>
<tr>
<td>pNP-α-galactoside</td>
<td>0.0001</td>
</tr>
<tr>
<td>pNP-α-L-arabinofuranoside</td>
<td>0.2083</td>
</tr>
<tr>
<td>pNP-α-L-arabinopyranoside</td>
<td>0.0708</td>
</tr>
<tr>
<td>pNP-α-glucoside</td>
<td>0.0025</td>
</tr>
<tr>
<td>pNP-β-glucoside</td>
<td>0.001</td>
</tr>
<tr>
<td>pNP-β-xylloside</td>
<td>0.003</td>
</tr>
<tr>
<td>pNP-β-mannoside</td>
<td>0.001</td>
</tr>
<tr>
<td>Ceralpha (α-amylase)</td>
<td>0.002</td>
</tr>
<tr>
<td>Sucrose (invertase)</td>
<td>0.0025</td>
</tr>
<tr>
<td>Maltose (maltase)</td>
<td>0.0033</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.

3. **PHYSICOCHEMICAL PROPERTIES:**
   pH Optima: 5.0
   pH Stability: 4.0-9.0
   Temperature Optima: 60°C
   Temperature Stability: < 70°C

4. **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.**
5. EXPERIMENTAL DATA:

- **pH Optima**
  - Graph showing relative activity (%) vs. pH.

- **pH Stability**
  - Graph showing relative activity (%) vs. pH.

- **Thermal Optima**
  - Graph showing relative activity (%) vs. temperature (°C).

- **Thermal Stability**
  - Graph showing relative activity (%) vs. temperature (°C).