**E-EGALN 05/19**

(Effect E 3.2.1.89) arabinogalactan 4-beta-D-galactanohydrolase
CAZy Family: GH53
CAS: 58182-40-4

**PROPERTIES**

1. **ELECTROPHORETIC PURITY:**
   - Single band on SDS-gel electrophoresis (MW ~48,000)

2. **SPECIFIC ACTIVITY:**
   - 180 U/mg protein (on potato galactan) at pH 4.0 and 40°C
   
   One Unit of galactanase activity is defined as the amount of enzyme required to release one µmole of galactose reducing-sugar equivalents per minute from potato galactan (10 mg/mL) in sodium acetate buffer (100 mM), pH 4.0 at 40°C.

3. **SPECIFICITY:**
   - endo-hydrolysis of (1,4)-β-D-galactose linkages in (1,4)-β-galactans and type I arabinogalactans.

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

<table>
<thead>
<tr>
<th>Substrate</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potato Galactan</td>
<td>100</td>
</tr>
<tr>
<td>Polygalacturonic Acid</td>
<td>0.428</td>
</tr>
<tr>
<td>CM-Cellulose</td>
<td>0.029</td>
</tr>
<tr>
<td>CM-Linear Arabinan</td>
<td>0.008</td>
</tr>
<tr>
<td>Birch-wood Xylan</td>
<td>0.0008</td>
</tr>
<tr>
<td>p-NP-β-Galactoside</td>
<td>0.0008</td>
</tr>
<tr>
<td>p-NP-α-L-Arabinofuranoside</td>
<td>0.0004</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 acetate buffer (100 mM), pH 4.0 at 40°C.

5. **PHYSICOCHEMICAL PROPERTIES:**
   - Recommended conditions of use are at pH 4.0-4.5 and up to 50°C
   
   **pH Optima:** 4.0-4.5
   **pH Stability:** 3.0-7.0 (> 75% control activity after 24 h at 4°C)
   **Temperature Optima:** 50°C (10 min reaction)
   **Temperature Stability:** < 50°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 acetate buffer (100 mM), pH 4.0 containing 1 mg/mL BSA. **Swirl to mix the enzyme immediately prior to use.**