β-GLUCOSIDASE from *Agrobacterium* sp. (Lot 100201c)

Recombinant

E-BGOSAG **07/13**

(EC 3.2.1.21) beta-D-glucoside glucohydrolase
CAZy: GH Family 1

PROPERTIES

1. ELECTROPHORETIC PURITY:

- Single band on SDS-gel electrophoresis (MW ~ 52,200)
- One major bands on isoelectric focusing (pI ~ 5.5)

2. SPECIFIC ACTIVITY:

161 U/mg protein (on p-NP-β-D-Glucopyranoside) at pH 6.5 and 40°C.

One Unit of β-glucosidase activity is defined as the amount of enzyme required to release one µmole of of *p*-nitrophenol (*p*-NP) per minute from *p*-nitrophenyl-β-D-glucopyranoside (10 mM) in sodium maleate buffer (50 mM), pH 6.5 at 40°C.

3. OTHER ACTIVITIES (as a percentage of β-glucosidase activity):

Enzyme measured	Substrate	Activity, %
β-Glucosidase	*p*-NP-β-D-Glucopyranoside	100
β-Glucosidase	Cellobiose	~ 110
β-Galactosidase	*p*-NP-β-D-Galactopyranoside	~ 57
α-Amylase	Ceralpha Reagent	< 0.0001
Amyloglucosidase	Starch	< 0.0001
α-Glucosidase	*p*-NP-α-D-Glucopyranoside	< 0.0001
endo-1,4-β-Glucanase	Cellazyme C Tablets (Megazyme)	< 0.0001

Action on polysaccharide and *p*-nitropenyl substrates was determined at final concentrations of 10 mg/mL and 10 mM, respectively, in sodium maleate buffer (100 mM), pH 6.5 at 40°C.

4. RELATIVE RATES OF HYDROLYSIS OF SUBSTRATES:

Substrate	%
Cellobiose	100
Laminaribiose	~ 83
Laminaritriose	~ 37
Laminaritetraose	~ 11
Laminaripentaose	~ 13
Laminarihexaose	~ 11
Gentiobiose	~ 8.1
Sophorose	~ 48
1,4-ß-D-Glucosyl-D-mannose	~ 26
p-Nitrophenyl ß-D-glucopyranoside	~ 566
p-Nitrophenyl ß-D-xylanopyranoside	~ 2.6
p-Nitrophenyl α-D-glucopyranoside	< 0.0001

5. PHYSICOCHEMICAL PROPERTIES:

pH Optima: 6.5 - 7.0 (at 40°C)
pH Stability: 5.0 - 9.0 (at 40°C for 30 min)
Temperature Optima: 50°C (10 min at pH 7.0)
Temperature Stability: Unstable above 50°C

6. STORAGE CONDITIONS

The enzyme is supplied as an ammonium sulphate suspension in 0.02% (w/v) sodium azide and should be stored at 4°C. For assay, this enzyme should be diluted in sodium maleate buffer (50 mM), pH 6.5 containing 0.5 mg/mL BSA. **Swirl to mix the enzyme immediately prior to use.**