endo-1,4-β-MANNANASE from *Bacillus circulans* (Lot 140201a)

Recombinant

E-BMABC **01/18**

(EC 3.2.1.78) mannan endo-1,4-beta-mannosidase; 4-beta-D-mannan mannanohydrolase
CAZy Family: GH5
CAS: 37288-54-3

PROPERTIES

1. ELECTROPHORETIC PURITY:

- Single band on SDS-gel electrophoresis (MW ~ 52,000)
- One major bands on isoelectric focusing (pI ~ 5.9)

2. SPECIFIC ACTIVITY:

49 U/mg protein (on carob galactomannan) at pH 7.5 and 40°C.

One Unit of mannanase activity is defined as the amount of enzyme required to release one µmole of mannose reducing-sugar equivalents per minute from carob galactomannan (5 mg/mL) in sodium phosphate buffer (100 mM), pH 7.5 at 40°C.

3. SPECIFICITY:

Random hydrolysis of (1,4)-β-D-mannosidic linkages in mannans, galactomannans and glucomannans.

4. RELATIVE RATES OF HYDROLYSIS OF SUBSTRATES:

Enzyme Measured	Substrate	Activity, %
endo-1,4-β-Mannanase	Carob Galactomannan (low viscosity)	100
endo-1,4-β-Glucanase	CM-Cellulose 4M	< 0.01
β-Galactosidase	*p*-NP-β-D-Galactopyranoside	< 0.01
β-Glucosidase	*p*-NP-β-D-Glucopyranoside	< 0.001
β-Mannosidase	*p*-NP-β-D-Mannopyranoside	< 0.001

Action on polysaccharide and *p*-nitropenyl substrates was determined at final concentrations of 5 mg/mL and 5 mM, respectively, in sodium phosphate buffer (100 mM), pH 7.5 at 40°C.

5. PHYSICOCHEMICAL PROPERTIES:

Recommended conditions of use are at pH 7.0 - 10.0 and up to 40°C

pH Optima:	7.0 - 10.0
pH Stability:	7.0 - 9.0 (> 75% control activity after 24 hours at 4°C)
Temperature Optima:	60°C (10 min. reaction)
Temperature Stability:	up to 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 phosphate buffer (100 mM), pH 7.5 containing 1 mg/mL BSA. **Swirl to mix the enzyme immediately prior to use.**

7. EXPERIMENTAL DATA