MALTOGENIC AMYLASE from *Bacillus* sp. (Lot 171201a)

E-MALAA **01/18**

(EC 3.2.1.133) glucan 1,4-alpha-maltohydrolase
CAZy Family: GH13
CAS: 160611-47-2

PROPERTIES

1. ELECTROPHORETIC PURITY:

- Single band on SDS-gel electrophoresis (MW ~ 70,000)
- One major band on isoelectric focusing (pI ~ 8.5)

2. SPECIFIC ACTIVITY:

235 U/mg protein (on maltotriose) at pH 5.0 and 40°C

One Unit of maltogenic amylase activity is defined as the amount of enzyme required to release one µmole of D-glucose per minute from maltotriose (20 mg/mL) in sodium acetate buffer (100 mM), pH 5.0 at 40°C.

3. SPECIFICITY:

Hydrolysis of (1-4)-α-D-glucosidic linkages in polysaccharides, removing successive α-maltose residues from the non-reducing ends of the chains.

4. RELATIVE RATES OF HYDROLYSIS OF SUBSTRATES:

Substrate	%
Maltotriose	100
*p*NP-β-D-maltotrioside (Betamyl-3 reagent)	55
*p*NP-α-D-maltoheptaoside (Amylase HR reagent)	8
*p*NP-β-D-maltoside (AMG reagent)	0.025
*p*NP-α-D-glucopyranoside	<0.0001

Action on maltotriose and *p*NP-α-D-glucopyranoside was determined at a final substrate concentration of 10 mg/mL and 2.5 mM, respectively. Action on Betamyl-3 reagent, Amylase HR reagent and AMG reagent was determined in the presence of excess α- or β-glucosidase, as per the relevant Megazyme data booklet. All activities were measured in sodium acetate buffer (100 mM), pH 5.0 at 40°C.

5. PHYSICOCHEMICAL PROPERTIES:

Recommended conditions of use are at pH 4.5-6.0 and up to 70°C

pH Optima:	5.0-5.5
pH Stability:	4.0-7.0 (> 80% control activity after 24 h at 4°C)
Temperature Optima:	60°C (10 min reaction)
Temperature Stability:	up to 70°C (> 80% 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 5.0. **Swirl to mix the enzyme immediately prior to use.**

7. EXPERIMENTAL DATA: