



## 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  $\mu$ mole 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)- $\alpha$ -D-glucosidic linkages in polysaccharides, removing successive  $\alpha$ -maltose residues from the non-reducing ends of the chains.

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

Substrate	%
Maltotriose	100
pNP- $\beta$ -D-maltotrioside (Betamyl-3 reagent)	55
pNP- $\alpha$ -D-maltoheptaoside (Amylase HR reagent)	8
pNP- $\beta$ -D-maltoside (AMG reagent)	0.025
pNP- $\alpha$ -D-glucopyranoside	<0.0001

Action on maltotriose and pNP- $\alpha$ -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  $\alpha$ - or  $\beta$ -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)

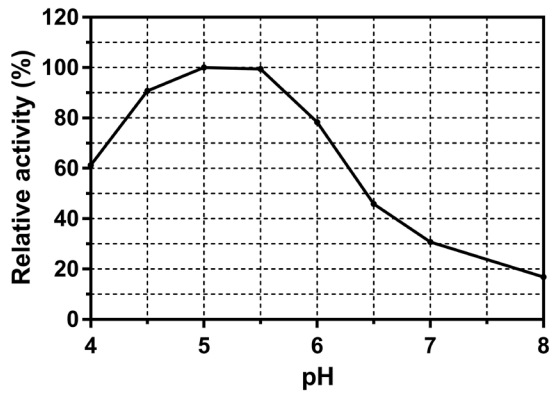
Temperature Stability: up to 70°C (> 80% control activity after 15 min incubation at temperature)

#### 6. STORAGE CONDITIONS:

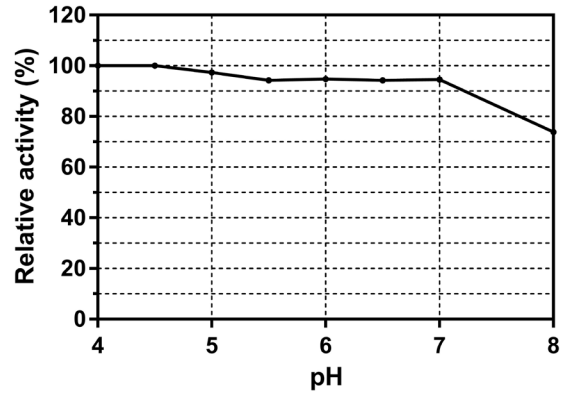
The enzyme is supplied as an ammonium sulphate suspension containing 0.02% (w/v) sodium azide and should be stored at 4°C. For assay, this enzyme should be diluted in sodium acetate buffer (100 mM), pH 5.0. **Swirl to mix the enzyme immediately prior to use.**

7. EXPERIMENTAL DATA:

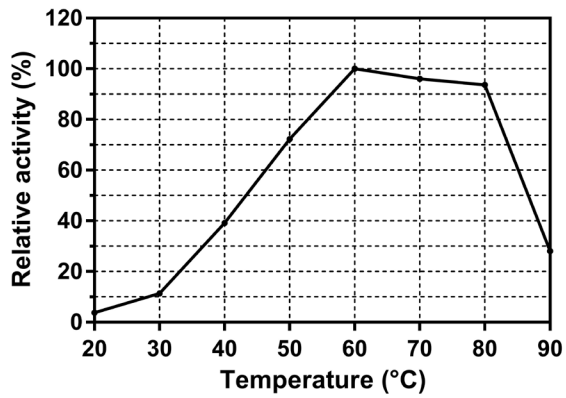
pH Optima



pH Stability



Thermal Optima



Thermal Stability

