



ISOAMYLASE HP from *Pseudomonas* sp. (Lot 130101d)

E-ISAMYHP

02/19

(EC 3.2.1.68) glycogen 6- α -D-glucanohydrolase
CAZy Family: GH13
CAS: 9067-73-6

PROPERTIES

1. ELECTROPHORETIC PURITY:

- Single major band on SDS-gel electrophoresis (MW = 71,500).
- Single major band on isoelectric focusing (pI = 5.0).

2. SPECIFIC ACTIVITY:

240 U/mg protein (on oyster glycogen) at pH 4.0 and 40°C

One Unit of isoamylase activity is defined as the amount of enzyme required to release one μ mole of reducing sugar per minute from oyster glycogen (10 mg/mL) in sodium acetate buffer (100 mM), pH 4.0 at 40°C. One Unit as defined here is approximately equal to 67 KU as defined by Sigma for Isoamylase (rice starch as substrate at pH 3.5 and 40°C).

3. SPECIFICITY:

Hydrolysis of (1,6)- α -D-glucosidic branch linkages in glycogen, amylopectin and their β -limit dextrins.

4. RELATIVE RATES OF HYDROLYSIS OF SUBSTRATES:

| Enzyme Activity | Substrate | % |
|--------------------------|-------------------------------------|-------------|
| Isoamylase | Oyster glycogen | 100 |
| α -Amylase | Reduced maltoheptaose | < 0.0004 |
| Maltase | Maltose | < 0.0004 |
| exo- α -Glucanase | Linear- α -1,4-maltodextrins | < 0.0000004 |

Actions were determined at 40°C and pH 4.0. α -Amylase was measured by monitoring hydrolysis of maltoheptaose by HPLC using a Waters Sugar Pac[®] column. Incubation of 100 U of isoamylase with 0.2 mL of maltoheptaose (10 mg/mL) at pH 4.0 resulted in no production of low molecular weight oligosaccharides in 16 h. Maltase (α -glucosidase) was measured with maltose (10 mg/mL) as substrate and exo- α -glucanase was measured with linear- α -1,4-maltodextrins (10 mg/mL) as substrate with measurement of released D-glucose.

This enzyme is ideally suited for starch structural research.

4. PHYSICOCHEMICAL PROPERTIES:

Recommended conditions of use are at pH 4.0 and up to 40°C

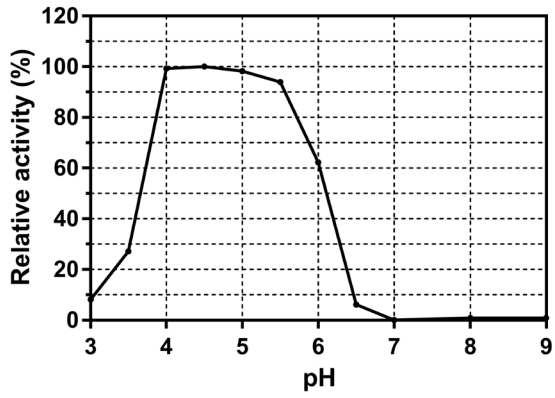
| | |
|------------------------|-------------------------|
| pH Optima: | 4.0-5.0 |
| pH Stability: | 3.5-6.0 (16 h, 4°C) |
| Temperature Optima: | 50°C |
| Temperature Stability: | < 45°C (pH 4.0, 15 min) |

5. PRODUCT DETAILS:

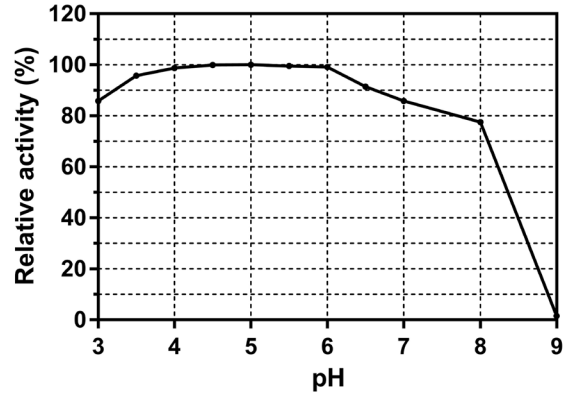
The enzyme is supplied as an ammonium sulphate suspension containing 0.02% sodium azide and should be stored at 4°C. This enzyme is very unstable to freezing and thawing. **DO NOT FREEZE.** It is recommended that all buffers used for dilution contain BSA (1 mg/mL). **Swirl to mix the enzyme immediately prior to use.**

6. EXPERIMENTAL DATA:

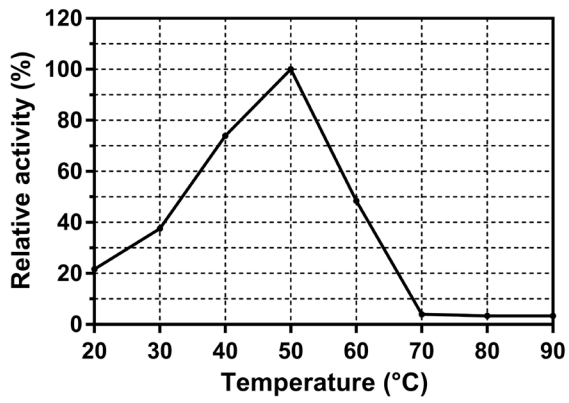
pH Optima



pH Stability



Thermal Optima



Thermal Stability

