



## ISOAMYLASE from *Pseudomonas* sp. (Lot 130103b)

### E-ISAMY

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

08/19

### 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:

~ 180 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  $\mu$ 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)- $\alpha$ -D-glucosidic branch linkages in glycogen, amylopectin and their  $\beta$ -limit dextrins.

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

Enzyme Activity	Substrate	%
Isoamylase	Oyster glycogen	100
$\alpha$ -Amylase	Reduced maltoheptaose	< 0.0004
Maltase	Maltose	< 0.0004
exo- $\alpha$ -Glucanase	Linear- $\alpha$ -1,4-maltodextrins	< 0.003

Actions were determined at 40°C and pH 4.0.  $\alpha$ -Amylase was measured by monitoring hydrolysis of maltoheptaose by HPLC using a Waters Sugar Pac<sup>®</sup> 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 ( $\alpha$ -glucosidase) was measured with maltose (10 mg/mL) as substrate and exo- $\alpha$ -glucanase was measured with linear- $\alpha$ -1,4-maltodextrins (10 mg/mL) as substrate with measurement of released D-glucose.

**Recommended for use in AOAC 2000.11 (polydextrose in food)**

#### 4. PHYSICOCHEMICAL PROPERTIES:

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

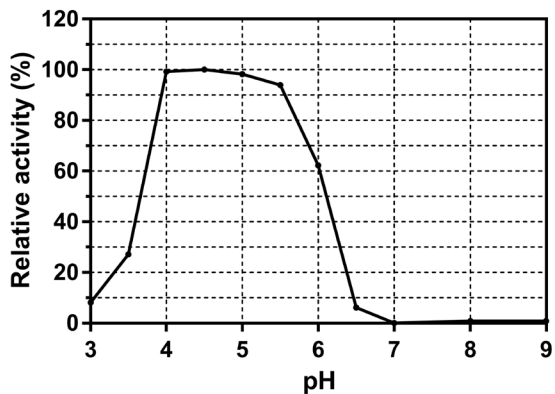
pH Optima:	4.0-5.0
pH Stability:	3.5-6.0 (16 h, 4°C)
Temperature Optima:	50°C
Temperature Stability:	< 45°C (pH 4.0, 15 min)

#### 5. PRODUCT DETAILS:

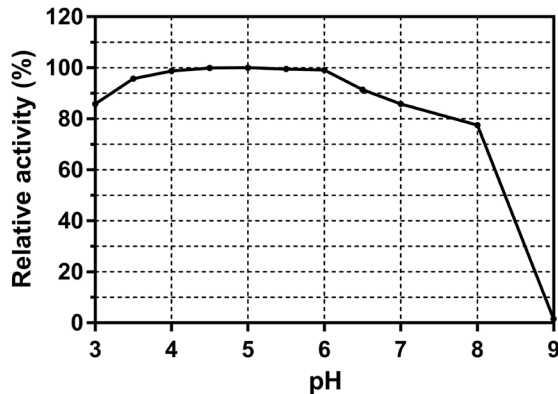
The enzyme is supplied as an ammonium sulphate suspension containing 0.02% sodium azide and should be stored at 4°C. This enzyme is very unstable to freezing and thawing. **DO NOT FREEZE**. It is recommended that all buffers used for dilution contain BSA (1 mg/mL). **Swirl to mix the enzyme immediately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

6. EXPERIMENTAL DATA:

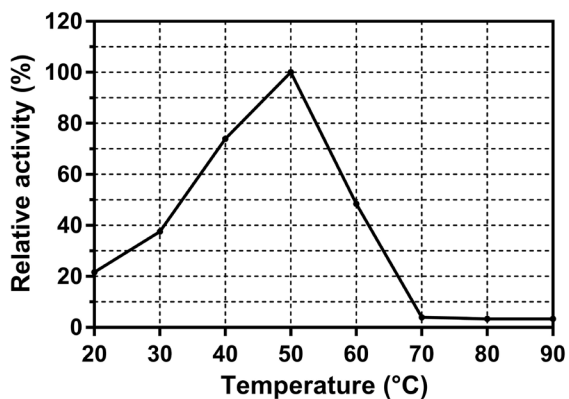
pH Optima



pH Stability



Thermal Optima



Thermal Stability

