



ISOAMYLASE from *Pseudomonas* sp. (Lot 130104b)

E-ISAMY

10/14

(EC 3.2.1.68) glycogen 6-alpha-D-glucanohydrolase
CAZy: GH Family 13

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:

All activities are at 40°C and pH 4.0. Isoamylase was assayed using oyster glycogen and using the Nelson/Somogyi reducing sugar procedure. α -Amylase was measured using reduced maltoheptaose (10 mM) as substrate with measurement of reducing sugar increase, and 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.

Enzyme	Activity	Substrate	Activity (U/mg protein)
Isoamylase		Oyster glycogen	260
α -amylase		Reduced Maltoheptaose	< 0.001
Maltase		Maltose	< 0.001
Exo- α -Glucanase		Linear- α -1,4-maltodextrins	< 0.000001

One unit of activity is the amount of enzyme required to release one micromole of reducing sugar equivalent from the defined substrate per min at pH 4.0 and 40°C. One Unit as defined here is approximately equal to 160 Sigma Isoamylase enzyme Units. Megazyme can supply an assay format based on glycogen/iodine if required. This allows the measurement of isoamylase in the presence of ammonium sulphate.

This enzyme is ideally suited for starch structural research.

3. PHYSICOCHEMICAL PROPERTIES:

pH Optima:	3.0 - 4.5
pH Stability:	3.5 - 5.5 (4 hr, 40°C)
Temperature Optima:	50°C
Temperature Stability:	< 45°C (pH 4.0, 30 min)

4. PRODUCT DETAILS:

The enzyme is supplied as an ammonium sulphate suspension at 1000 U/mL in 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).