ISOPULLULANASE from *Aspergillus niger* (Lot 151002a)

Recombinant

E-ISPUAN **11/15**

(EC 3.2.1.57) pullulan 4-glucanohydrolase (isopanose-forming)
CAZy: GH Family 49

PROPERTIES

1. ELECTROPHORETIC PURITY:

- Single band on SDS-gel electrophoresis (MW ~ 60,500)
- One major band on isoelectric focusing (pI ~ 5.2)

2. SPECIFIC ACTIVITY:

65 U/mg protein (on pullulan) at pH 3.5 and 40°C.

One Unit of isopullulanase activity is defined as the amount of enzyme required to release one µmole of glucose reducing sugar equivalents per minute from pullulan (10 mg/mL) in formic acid buffer (100 mM), pH 3.5 at 40°C.

3. SPECIFICITY:

Hydrolysis of pullulan to isopanose (6-α-maltosylglucose).

4. RELATIVE RATES OF HYDROLYSIS OF SUBSTRATES:

Substrate	%
Pullulan (P-PULLBH)	100
6^3-α-D-Glucosyl-maltotriose (O-GMT)	< 0.007
6^3-α-D-Glucosyl-maltotriosyl-maltotriose (O-GMH)	~ 0.64
Isomaltose	< 0.0004
Lactose	< 0.0003
Maltose	< 0.0004
Panose	~ 54
Sucrose	< 0.0003
Starch	< 0.0001

Action on substrates was determined at final concentration of 5 mg/mL in formic acid buffer (100 mM), pH 3.5 at 40°C.

5. PHYSICOCHEMICAL PROPERTIES:

Recommended conditions of use are at pH 3.0 - 5.0 and up to 40°C

pH Optima:	3.0 - 3.5
pH Stability:	3.0 - 9.0 (> 75% control activity after 24 hours at 4°C)
Temperature Optima:	40°C (10 min. reaction)
Temperature Stability:	up to 40°C

6. STORAGE CONDITIONS

The enzyme is supplied as a solution containing 50% glycerol and 0.02% (w/v) sodium azide and should be stored at -20°C. For assay, this enzyme should be diluted in formic acid buffer (100 mM), pH 3.5 containing 1 mg/mL BSA. **Swirl to mix the enzyme immediately prior to use.**

7. EXPERIMENTAL DATA