



## $\alpha$ -GLUCOSIDASE from *Thermotoga maritima* (Lot 151001a)

### Recombinant - Thermostable

#### E-AGLUTM

10/15

(EC 3.2.1.20) alpha-glucosidase; alpha-D-glucoside glucohydrolase

CAZy: GH Family 4

CAS: 9001-42-7

#### PROPERTIES

##### 1. ELECTROPHORETIC PURITY:

- Single band on SDS-gel electrophoresis (MW ~ 56,000)
- One major bands on isoelectric focusing (pI ~ 6.1)

##### 2. SPECIFIC ACTIVITY:

**32 U/mg protein (on *p*-NP- $\alpha$ -D-glucopyranoside) at pH 7.5 and 80°C.**  
 ~ 11 U/mg protein (on *p*-NP- $\alpha$ -D-glucopyranoside) at pH 7.5 and 60°C.

**One Unit** of  $\alpha$ -glucosidase activity is defined as the amount of enzyme required to release one  $\mu$ mole of of *p*-nitrophenol (*p*-NP) per minute from *p*-nitrophenyl- $\alpha$ -D-glucopyranoside (5 mM) in Tris.HCl buffer (100 mM), pH 7.5 at 80°C.

##### 3. SPECIFICITY:

Hydrolysis of terminal, non-reducing (1,4)- $\alpha$ -linked D-glucose residues with release of  $\alpha$ -D-glucose.

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

Enzyme Measured	Substrate	Activity, %
$\alpha$ -Glucosidase	<i>p</i> -NP- $\alpha$ -D-Glucopyranoside	100
$\beta$ -Glucosidase	<i>p</i> -NP- $\beta$ -D-Glucopyranoside	< 0.1
$\alpha$ -Galactosidase	<i>p</i> -NP- $\alpha$ -D-Galactopyranoside	~ 71
$\beta$ -Galactosidase	<i>p</i> -NP- $\beta$ -D-Galactopyranoside	< 1.0
$\alpha$ -Mannosidase	<i>p</i> -NP- $\alpha$ -D-Mannopyranoside	< 0.0001
$\beta$ -Mannosidase	<i>p</i> -NP- $\beta$ -D-Mannopyranoside	< 0.0001
$\alpha$ -Glucosidase	Maltose	< 0.05
Sucrase	Sucrose	< 0.1
Trehalase	Trehalose	< 0.1

Action on polysaccharide and *p*-nitrophenyl substrates was determined at final concentrations of 10 mg/mL and 5 mM, respectively, in Tris.HCl buffer (100 mM), pH 7.5 at 40°C.

##### 5. PHYSICOCHEMICAL PROPERTIES:

Recommended conditions of use are at pH 7.5 - 8.0 and up to 80°C

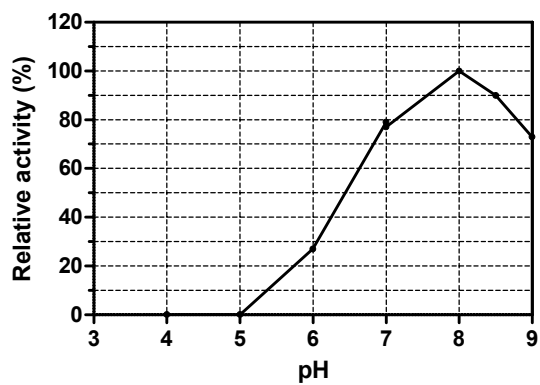
pH Optima: 7.5 - 8.5  
 pH Stability: 4.0 - 9.0 (> 75% control activity after 24 hours at 4°C)  
 Temperature Optima: 80 - 100°C (10 min. reaction)  
 Temperature Stability: up to 80°C

##### 6. STORAGE CONDITIONS

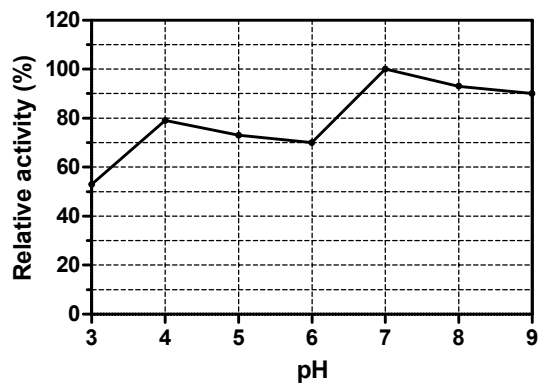
The enzyme is supplied as a solution containing 50% glycerol plus 0.02% (w/v) sodium azide and should be stored at -20°C. **For assay, this enzyme should be diluted in Tris.HCl buffer (100 mM), pH 7.5 containing 1 mg/mL BSA, 3 mM NAD, 4 mM manganese chloride and 400 mM mercaptoethanol. Swirl to mix the enzyme immediately prior to use.**

## 7. EXPERIMENTAL DATA

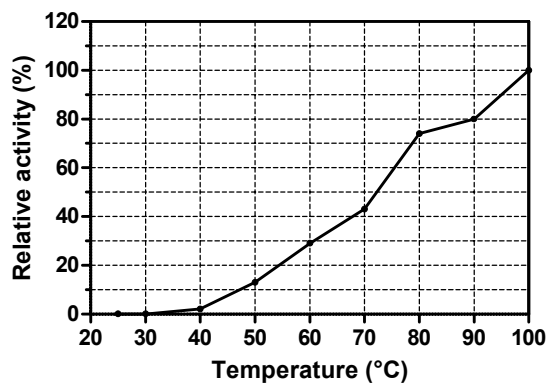
### pH Optima



### pH Stability



### Thermal Optima



### Thermal Stability

