Glucoamylase

Catalogue No. GLUC-70-6881

ORIGIN

Rhizopus sp.

SPECIFICATIONS

Appearance . . . . . White Lyophilised Powder
Activity . . . . . ≥30 U/mg powder at 40°C

CHARACTERISTICS

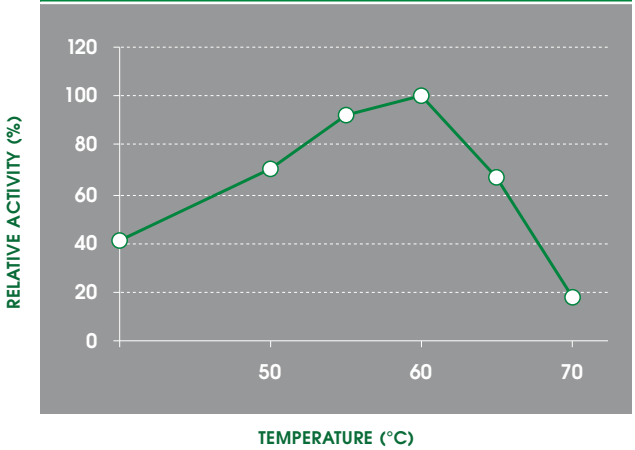
Molecular weight . . . . . ~70kDa
K_m values:
- Maltose . . . . . 11 ± 1.1x10^{-4}M
- Maltotriose . . . . . 3.6 ± 0.51x10^{-4}M
- Maltotetraose . . . . . 2.5 ± 0.33x10^{-4}M
- Maltopentaose . . . . . 1.6 ± 0.02x10^{-4}M

Optimum pH **(Fig. 1)** . . . . . 4.5 - 5.0
Optimum temperature **(Fig. 2)** . . . . . 60°C
pH stability **(Fig. 3)** . . . . . 4.0 - 8.5 (25°C, 20hr)
Thermal stability **(Fig. 4)** . . . . . Below 45°C (pH 5.5, 10 min.)
Substrate specificity . . . . . Hydrolyses soluble starch amylopectin, glycogen, α- or β- limit dextrin, amylose, maltooligosaccharides and panose
Lyophilised stability . . . . . 1 year at -20°C

FIG.1 pH Optimum

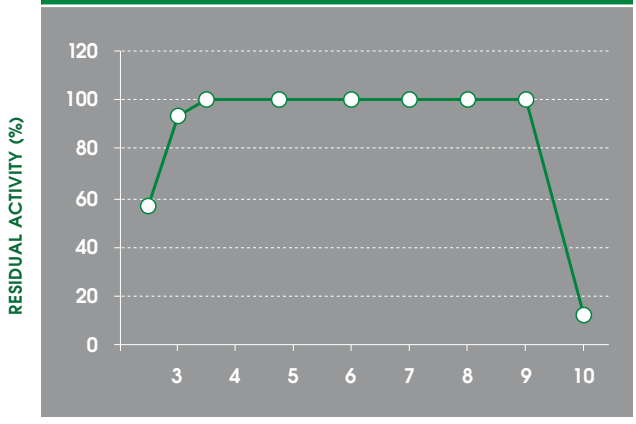
(40°C, 15 min reaction in 50 mM buffer solution: pH 2.0, sodium acetate-HCl; pH 3.0-6.0, acetate; pH 6.0-8.0, phosphate)

FIG.2 Temperature Optimum



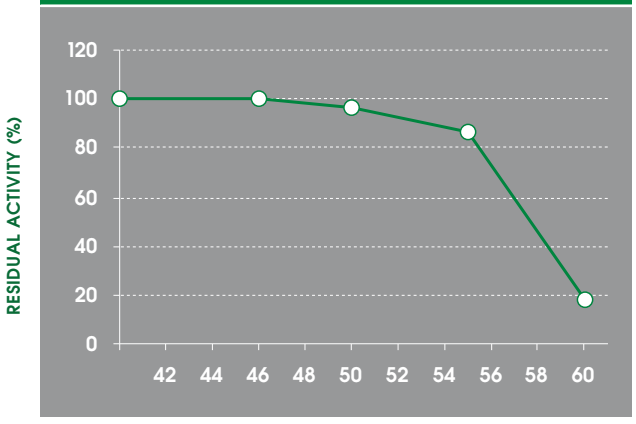
(15 min reaction in 50 mM acetate buffer, pH 4.5)

FIG.3 pH Stability



(25°C, 20 hrs treatment with 50mM buffer solution: pH 3.0-6.0 acetate; pH 6.0-9.0, phosphate; pH 9.0-11.0, borate)

FIG.4 Thermal Stability



(10 min treatment with 50 mM acetate buffer, pH 5.5)

ASSAY PRINCIPLE

Glucoamylase catalyses the following reaction:

$$\text{Starch} + n\text{H}_2\text{O} \xrightarrow{\text{Glucoamylase}} n\ \text{Glucose} + \text{Dextrin}$$

The formation of glucose is measured as a reducing sugar by the modified Fehling–Lehmann-School Method.

UNIT DEFINITION

One unit causes the formation of ten milligrams of glucose in 30 minutes at 40°C under standard assay method conditions.

(See Analytical Method for full details)

NOTES:

genzyme Diagnostics

THE AMERICAS
31 New York Avenue
Framingham, MA 01701-9322
Phone: 800 332 1042
Fax: 800 762 6311
Email: usdiagcustomerservice@genzyme.com

INTERNATIONAL
50 Gibson Drive
Kings Hill, West Malling
Kent, ME19 4AF, UK
Phone: +44 (0) 1732 220022
Fax: +44 (0) 1732 220024
Email: ukdiagcustomerservice@genzyme.com