ENZYMES

Glucoamylase

ORIGIN ***Rhizopus sp.***

CAT# GLUC-70-6881
EC# 3.2.1.3

SPECIFICATIONS

Appearance	White amorphous powder (salt free), lyophilised
Activity	≥30 U/mg powder at 40°C

APPLICATION

Useful for the structural investigation of carbohydrates and for the enzymatic determination of α-amylase when coupled with the related enzymes in critical analysis.

UNIT DEFINITION

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

ASSAY PRINCIPLE

Glucoamylase catalyses the following reaction:

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

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

CHARACTERISTICS

Molecular Weight:	~70kDa	
K_m values:	Maltose	11 ± 1.1 x 10^{-4} M
	Maltotriose	3.6 ± 0.51 x 10^{-4} M
	Maltotetraose	2.5 ± 0.33 x 10^{-4} M
	Maltopentaose	1.6 ± 0.02 x 10^{-4} M
Optimum pH (Fig. 1):	4.5 to 5.0	
Optimum Temperature (Fig. 2):	60°C	
pH Stability (Fig. 3):	4.0 to -8.5 (25°C for 20 hours)	
Thermal Stability (Fig. 4):	Stable at 45°C and below (pH 5.5 for 10 minutes)	
Substrate Specificity:	Hydrolyses soluble starch amylopectin, glycogen, α- or β- limit dextrin, amylose, maltooligosaccharides, and panose.	

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FIGURE 1: OPTIMUM pH

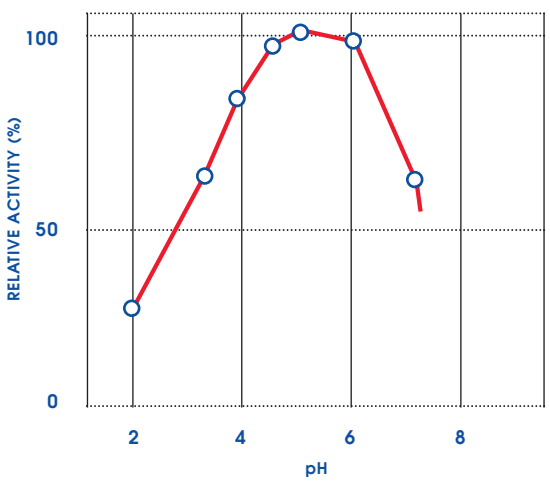


FIGURE 2: OPTIMUM TEMPERATURE

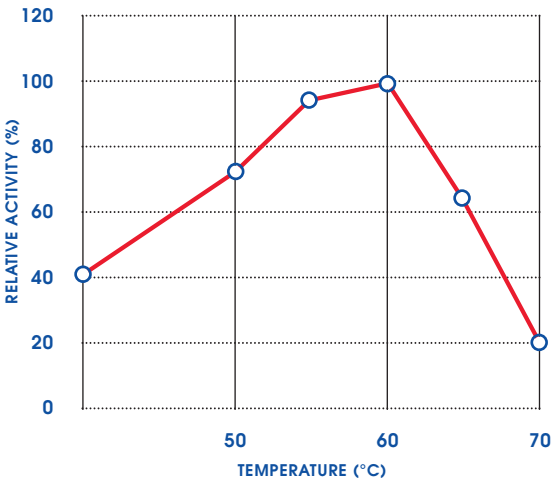


FIGURE 3: pH STABILITY (25°C FOR 20 HOURS)

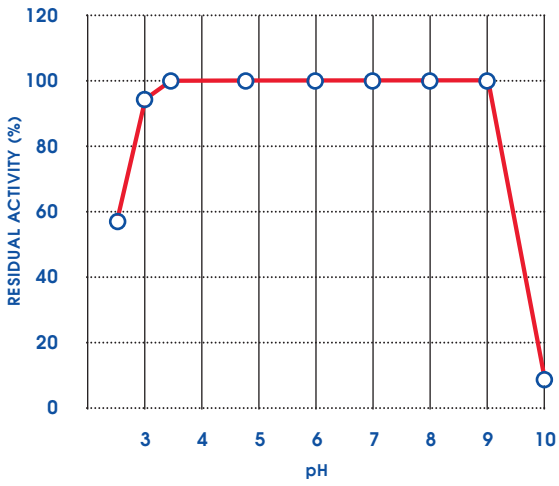
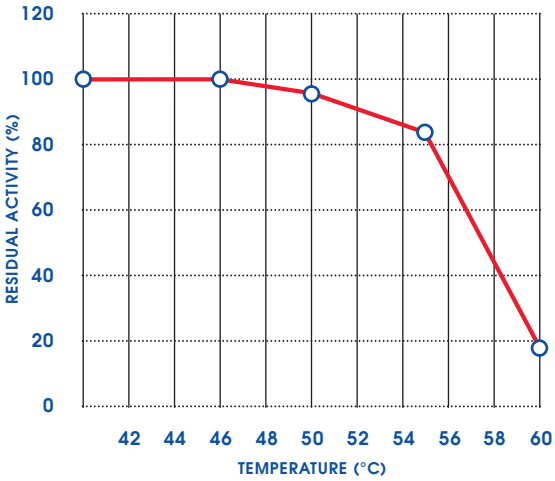


FIGURE 4: THERMAL STABILITY (pH 5.5 FOR 10 MINUTES)



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