

Glucose Oxidase HPS100

Catalogue No. GLOX-70-6451 and 70-6451-01

E.C. Number 1.1.3.4

ORIGIN

Aspergillus niger

SPECIFICATIONS

Activity >180.0 U/mg powder at 25°C

Specific activity >190.0 U/mg protein at 25°C

Contaminants:

o Glucose Oxidase to catalase ratio >2.0:1

Stability Stable for 5 years at -20°C

ASSAY PRINCIPLE

Glucose Oxidase (GO) catalyses the following reaction:



APPLICATION

GO HPS100 can be linked with Trinder reagents (on strips or other clinical chemistry formats) to determine the level of D-glucose in blood or urine.

UNIT DEFINITION

One unit of activity is defined as the amount of enzyme that will catalyse the oxidation of 1.0 micromole of glucose per minute at 25°C under the standard assay method conditions (available on request).

TABLE 1 Temperature factors for unit conversion

Assay Temp	Factor Relative to 25°C Result
25°C	1.00
30°C	1.07
37°C	1.09
45°C	1.08

Note: Temperature can influence the level of available oxygen in the reaction mixture.

CHARACTERISTICS

Molecular weight (by SDS-Page) 78.5kD
 Native structure^(1, 2, 3) Glycoprotein with 2 equal subunits and 2 moles of FAD
 Isoelectric point⁽²⁾ 4.2
 K_m value (calculated using Eadie-Hofstee) 3 x 10⁻² M (D-Glucose)
 Optimum pH (Fig. 1) pH 5.5 to 6.5
 Optimum temperature (Fig. 2) 37°C
 Stable pH range (Fig. 3) pH 4.0 to 7.5 (25°C for 20 hours)
 Thermal stability (Fig. 4) Stable up to 50°C (pH 7.0 for 15 mins)

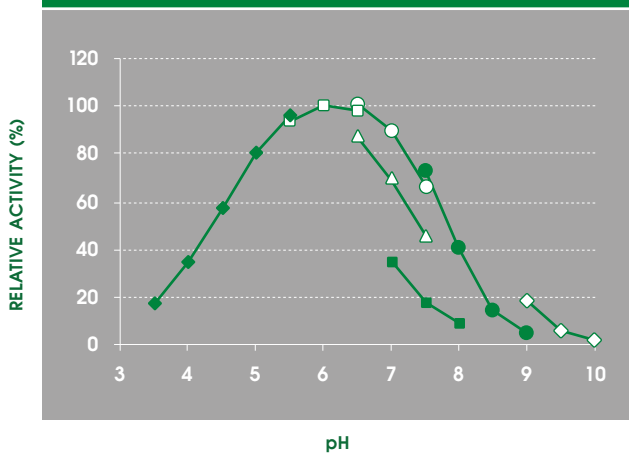
Substrate Specificity

Substrate specificity was tested in-house by substituting different sugars for glucose in the GO assay. Assays were based on a sugar concentration of 30 mM.

TABLE 2 Substrate specificity

Substrate	% of D-Glucose activity	Substrate	% of D-Glucose activity
D-Glucose	100	D-Sorbitol	<0.1
2-Deoxy-D-glucose	12	D-Ribose	<0.1
D-Mannose	0.4	D-Mannitol	<0.1
D-Galactose	0.4	L-Glucose	<0.1
D-Maltose	0.1	D-Lactose	<0.1
D-Xylose	0.1	Sucrose	<0.1
D-Fructose	<0.1	D-Trehalose	<0.1

FIG. 1 Optimum pH



◆ SODIUM ACETATE □ MES ○ MOPS ■ TRIS
 △ POTASSIUM PHOSPHATE ● BICINE ◇ CHES

FIG. 2 Optimum Temperature

