rG6PDH(L)

recombinant Glucose 6-phosphate dehydrogenase EC 1.1.1.49

from Leuconostoc sp.

Reaction Equation

D-Glucose 6-phosphate + NAD(P)$^+$
⇄ D-Glucono-1,5-lactone 6-phosphate + NAD(P)H + H$^+$

Specification

Specific Activity

U/mg protein	> 600 units

Contaminants

Hexokinase	< 0.01%
Phosphoglucose isomerase	< 0.005%
Phosphogluconate dehydrogenase	< 0.001%
Creatine kinase	< 0.001%
Glutathione reductase	< 0.001%
Phosphoglucomutase	< 0.001%
Myokinase	< 0.001%
Lactate dehydrogenase	< 0.01%
Pi	< 0.1%

Properties

pH stability : pH 5.0 - 9.0 (25°C, 1 week)
Thermal stability : ≦ 37°C (pH 7.8, 10 min)
Optimum pH : 7.5
Optimum temp. : 45°C
Km value : 2.2 × 10^{-4} mol/L (G6P, NAD^+-linked)
2.6 × 10^{-4} mol/L (NAD^+)
1.4 × 10^{-4} mol/L (G6P, $NADP^+$-linked)
1.2 × 10^{-5} mol/L ($NADP^+$)
Molecular weight : 54 kDa (SDS-PAGE)

Assay Procedure

I Spectrophotometric Method

Wavelength : 340 nm, Light path length : 1 cm
Final volume : 3.02 mL, Temperature : 30°C

Pipette the following reagents into a cuvette

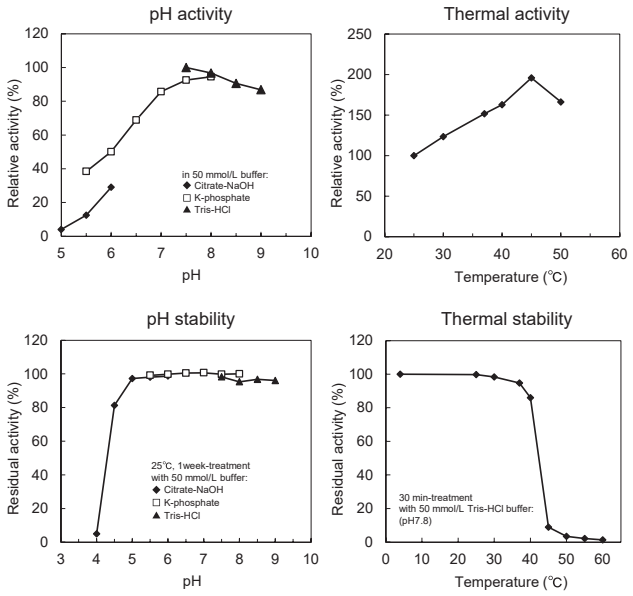
2.80 mL	Tris-HCl buffer (55 mmol/L, pH 7.8, 30°C) containing $MgCl_2$ (3.3 mmol/L)
0.10 mL	NAD^+ (60 mmol/L)
0.10 mL	G6P (0.1 mol/L)
0.02 mL	rG6PDH(L) (approx. 3 U/mL)

II Calculation

$$\frac{\Delta\ A/min \cdot V \cdot D}{6.3 \cdot d \cdot v} = U/mL$$

Δ A/min = The change in absorbance at 340 nm/minute
V = Total volume of reaction mixture (3.02 mL)
D = Enzyme dilution factor
6.3 = mmol/L extinction coefficient of NADH
($L \cdot mmol^{-1} \cdot cm^{-1}$)
d = Light path length (1 cm)
v = Volume of enzyme sample (0.02 mL)

Reference Data



Preparation and Storage

Lyophilized powder (Ammonium sulfate free)
Store below -20°C

Cat. No./Package

Cat. No.	Package	Cat. No.	Package
46857003	200 units	46854903	Bulk
46854003	1,000 units		

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