rG6PDH(Y)

recombinant Glucose 6-phosphate dehydrogenase EC 1.1.1.49

from Yeast

Reaction Equation

D-Glucose 6-phosphate + $NADP^+$

⇄ D-Glucono-1,5-lactone 6-phosphate + NADPH + H^+

Specification

Specific Activity

U/mg protein	> 250 units

Contaminants

Hexokinase	< 0.02%
Phosphoglucose isomerase	< 0.01%
Phosphogluconate dehydrogenase	< 0.01%
Creatine kinase	< 0.001%
Glutathione reductase	< 0.2%
Phosphoglucomutase	< 0.01%
Myokinase	< 0.01%
ATPase	< 0.001%

Properties

pH stability	: pH 5.5 - 6.5 (25 °C, 1 week)
Thermal stability	: ≦ 40 °C (pH 7.5, 10 min)
Optimum pH	: 8.0 - 8.5
Optimum temp.	: 50 °C
Km value	: 1.0 × 10^{-4} mol/L (G6P)
	5.7 × 10^{-5} mol/L ($NADP^+$)
Molecular weight	: 57 kDa (SDS-PAGE)

Assay Procedure

I Spectrophotometric Method

Wavelength : 340 nm, Light path length : 1 cm

Final volume : 3.12 mL, Temperature : 25 °C

Pipette the following reagents into a cuvette

2.50 mL	Glycylglycine buffer (0.1 mol/L, pH 8.5)
0.30 mL	$MgCl_2$ (0.2 mol/L)
0.15 mL	$NADP^+$ (10 mmol/L)
0.15 mL	G6P (10 mmol/L)
0.02 mL	rG6PDH(Y) (approx. 3 U/mL)

II Calculation

$$\frac{\Delta\ A/min \cdot V \cdot D}{6.2 \cdot d \cdot v} = U/mL$$

Δ A/min = The change in absorbance at 340 nm/minute

V = Total volume of reaction mixture (3.12 mL)

D = Enzyme dilution factor

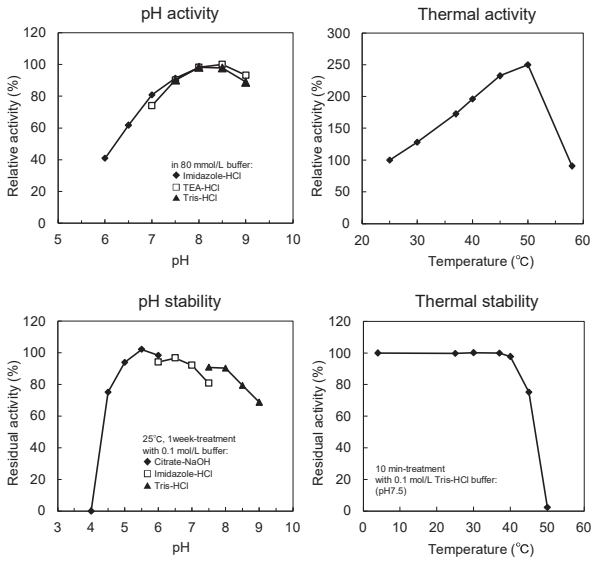
6.2 = mmol/L extinction coefficient of NADPH

($L \cdot mmol^{-1} \cdot cm^{-1}$)

d = Light path length (1 cm)

v = Volume of enzyme sample (0.02 mL)

Reference Data



Preparation and Storage

Lyophilized powder

Store below -20 °C

Cat. No./Package

Cat. No.	Package
46859053	1,000 units
46864053	5,000 units

Cat. No.	Package
46859903	Bulk

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