r6PGDH(Y)

recombinant Phosphogluconate dehydrogenase EC1.1.1.44

from Yeast

Reaction Equation

6-Phospho-D-gluconate + $NADP^+$
⇄ D-Ribulose 5-phosphate + CO_2 + NADPH + H^+

Specification

Specific Activity

U/mg protein	> 10 units

Contaminants

Glucose 6-phosphate dehydrogenase	< 0.05%
Glutathione reductase	< 0.05%
NADPH oxidase	< 0.01%

Properties

pH stability : pH 5.5 - 6.5 (25 °C, 1 week)
Thermal stability : ≦ 50 °C (pH 7.0, 10 min)
Optimum pH : 6.8 - 7.3
Optimum temp. : 50 °C
Km value : 7.8×10^{-5} mol/L (6PG)
1.9×10^{-5} mol/L ($NADP^+$)
Molecular weight : 46 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

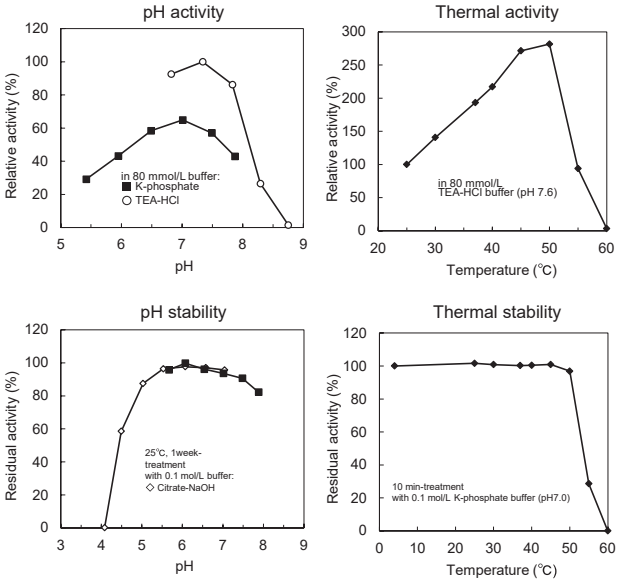
2.50 mL	Triethanolamine-HCl-NaOH buffer (0.1 mol/L, pH 7.6)
0.30 mL	$MgCl_2$ (0.1 mol/L)
0.15 mL	$NADP^+$ (10 mmol/L)
0.15 mL	6PG (10 mmol/L)
0.02 mL	r6PGDH(Y) (approx. 2 U/mL)

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
46861903	Bulk

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