

rGIDH(Y)

recombinant Glutamate dehydrogenase (NADP⁺) EC 1.4.1.4

from Yeast

Reaction Equation



Specification

Specific Activity

U/mg protein > 10 units
(for oxidation of L-Glutamate to α -Ketoglutarate)

Contaminants

Glucose 6-phosphate dehydrogenase < 0.1%
Phosphogluconate dehydrogenase < 0.5%
Glutathione reductase < 0.1%
NADPH oxidase < 0.01%

Properties

pH stability : pH 7.5 - 9.5 (25°C, 1 week)
Thermal stability : $\leq 50^\circ\text{C}$ (pH 7.5, 10 min)
Optimum pH : 8.5 - 9.0
Optimum temp. : 37°C
Km value : 4.1×10^{-2} mol/L (L-Glutamate)
 1.3×10^{-4} mol/L (NADP⁺)
 1.9×10^{-4} mol/L (α -Ketoglutarate)
 2.2×10^{-5} mol/L (NADPH)
Molecular weight : 52 kDa (SDS-PAGE)

Assay Procedure

I Spectrophotometric Method

Wavelength : 340 nm, Light path length : 1 cm
Final volume : 3.02 mL, Temperature : 25°C

Pipette the following reagents into a cuvette

2.85 mL	Na-pyrophosphate buffer (0.1 mol/L, pH 9.0) containing L-Glutamate (0.1 mol/L)
0.15 mL	NADP ⁺ (10 mmol/L)
0.02 mL	rGIDH (Y) (approx. 3 U/mL)

II Calculation

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

$\Delta A/\text{min}$ = The change in absorbance at 340 nm/minute

V = Total volume of reaction mixture (3.02 mL)

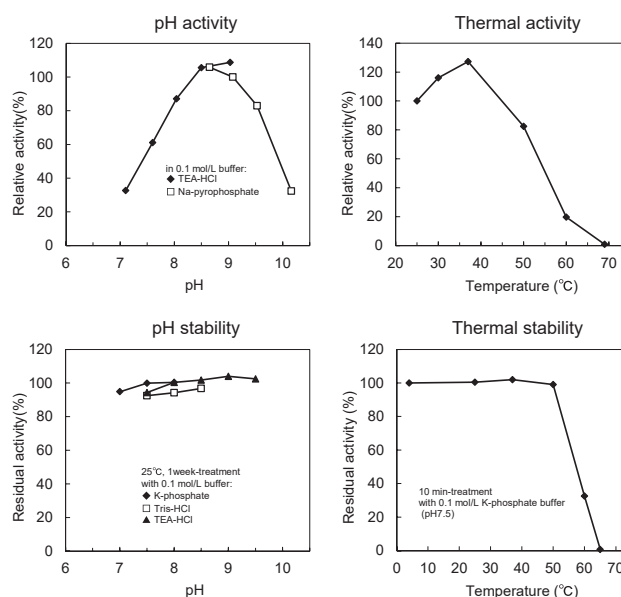
D = Enzyme dilution factor

6.2 = mmol/L extinction coefficient of NADPH
($\text{L} \cdot \text{mmol}^{-1} \cdot \text{cm}^{-1}$)

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
46868003	600 units
46870003	3,000 units
46747903	Bulk