

# rGIDH(Y)

## recombinant Glutamate dehydrogenase (NADP<sup>+</sup>) EC 1.4.1.4

### from Yeast

#### Reaction Equation



#### Specification

##### Specific Activity

U/mg protein > 10 units  
(for oxidation of L-Glutamate to  $\alpha$ -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°C (pH 7.5, 10 min)  
Optimum pH : 8.5 - 9.0  
Optimum temp. : 37°C  
Km value :  $4.1 \times 10^{-2}$  mol/L (L-Glutamate)  
 $1.3 \times 10^{-4}$  mol/L (NADP<sup>+</sup>)  
 $1.9 \times 10^{-4}$  mol/L ( $\alpha$ -Ketoglutarate)  
 $2.2 \times 10^{-5}$  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 <sup>+</sup> (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)

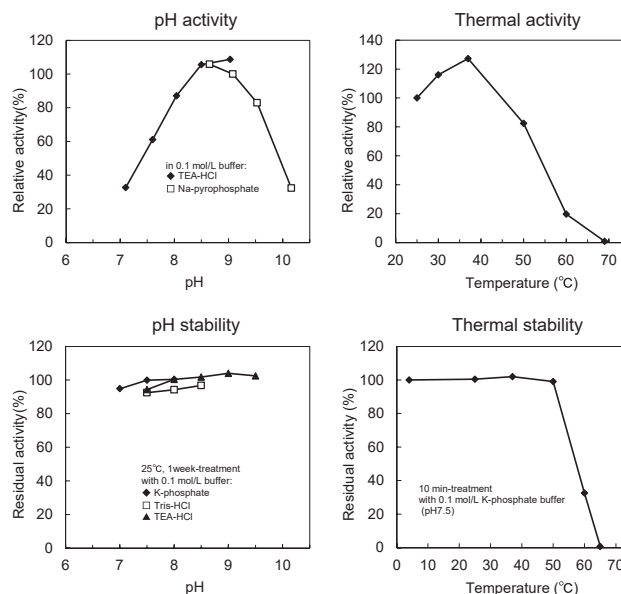
D = Enzyme dilution factor

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