# rMDH

## recombinant Malate dehydrogenase EC 1.1.1.37

*from Bacteria*

### Reaction Equation

L-Malate + $NAD^+$ ⇄ Oxaloacetate + NADH + $H^+$

### Specification

**Specific Activity**

| | |
|---|---|
| U/mg protein | > 550 units |

**Contaminants**

| | |
|---|---|
| Fumarase | < 0.01% |
| L-Lactate dehydrogenase | < 0.01% |
| Aspartate transaminase | < 0.01% |
| Glutamate dehydrogenase ($NAD^+$) | < 0.001% |
| NADH oxidase | < 0.001% |

### Properties

pH stability : pH 4.5 - 9.0 (25 °C, 1 week)
Thermal stability : ≦ 80 °C (pH 7.5, 15 min)
Optimum pH : 5.5 - 8.0
Optimum temp. : ≧ 37 °C
Km value : $9.0 \times 10^{-5}$ mol/L (Oxaloacetate)
$3.9 \times 10^{-5}$ mol/L (NADH)
Molecular weight : 40 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

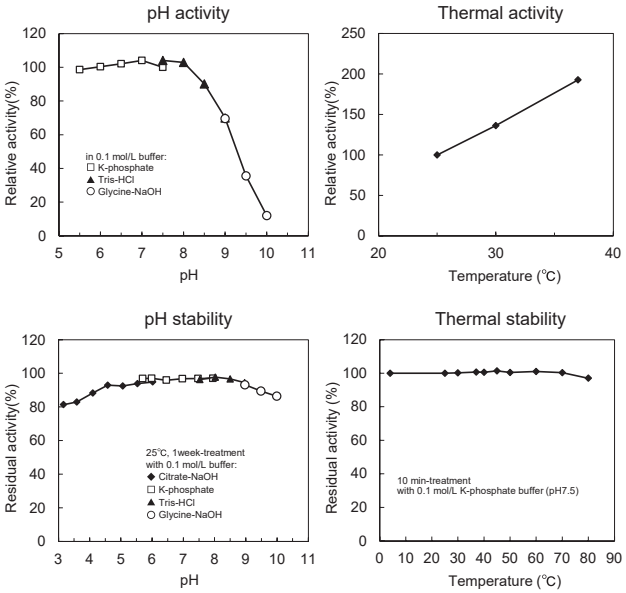
| | |
|---|---|
| 2.80 mL | K-phosphate buffer (0.1 mol/L, pH 7.5) |
| 0.15 mL | Oxaloacetate (10 mmol/L) |
| 0.05 mL | NADH (10 mg/mL) dissolved in Tris (10 mmol/L) |
| 0.02 mL | rMDH (approx. 3 U/mL) |

#### 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 |
|---|---|
| 46756903 | Bulk |

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