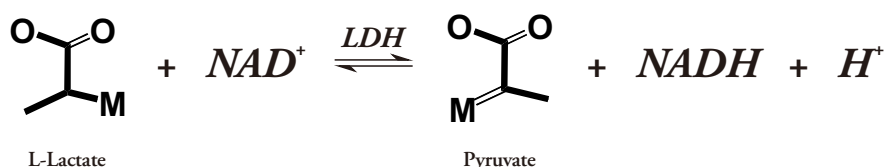


# L-LACTATE DEHYDROGENASE

(S)-Lactate:NAD<sup>+</sup> Oxidoreductase

## REACTION:



## PRODUCT DESCRIPTION

|                           |   |
|---------------------------|---|
| Catalog No.:              | qs50016   |
| Appearance:               | White amorphous powder  |
| Source:                   | Microorganism   |
| Enzyme Commission Number: | EC 1.1.1.27   |
| CAS Number:               | 9001-60-9   |
| Storage temperature:      | -20°C   |
| Specific activity:        | ≥ 300U/mg protein   |
| Unit definition:          | One unit will convert one micromole of pyruvate to L-lactate per min at pH 7.4 at 25°C. |

## PROPERTIES

|                              |  |           |
|------------------------------|--|-----------|
| Molecular weight:            | 38 kDa (SDS-PAGE)  |           |
| Isoelectric point:           | 6.2  |           |
| Michaelis constant:          | 1.3 × 10 <sup>-4</sup> M (Pyruvate)  |           |
|                              | 4.0 × 10 <sup>-6</sup> M (NADH)  |           |
| Optimum pH:                  | 6.5  | {Fig. 1}  |
| Optimum temperature:         | 45°C   | {Fig. 3}  |
| pH Stability:                | 4.5~10.0 (37°C, 1hr)   | {Fig. 2}  |
| Thermal stability:           | < 50°C (pH 7.4, 15min)   | {Fig. 4}  |
| Inhibitors:                  | Co <sup>2+</sup> , Cu <sup>2+</sup> , Fe <sup>3+</sup> , Ni <sup>2+</sup> , Zn <sup>2+</sup> , NEM, SDS, Proclin |           |
| Effect of various chemicals: |  | {Table 1} |

**Table 1.**

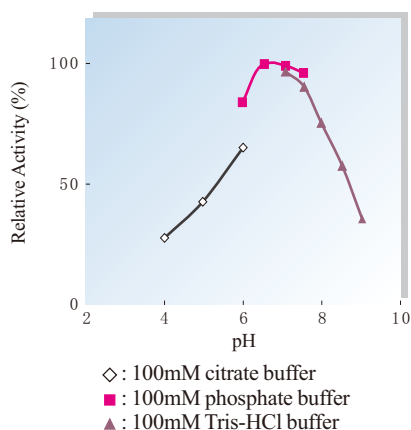
**Effect of Various Chemicals on L-LDH**

[The enzyme dissolved in 50mM Tris-HCl buffer, pH 7.5 (20U/ml) was incubated with each chemical at 37°C for 2hr.]

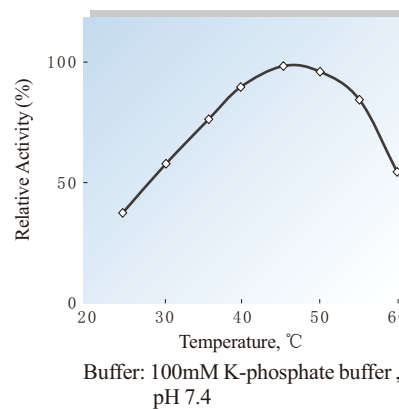
| Chemical                           | Concn. (mM) | Residual activity |
|------------------------------------|-------------|-------------------|
| None                               | -           | 100%              |
| CaCl <sub>2</sub>                  | 2.0         | 101%              |
| CoCl <sub>2</sub>                  | 2.0         | 50%               |
| CuSO <sub>4</sub>                  | 2.0         | 0%                |
| FeCl <sub>3</sub>                  | 2.0         | 27%               |
| MgSO <sub>4</sub>                  | 2.0         | 94%               |
| MnSO <sub>4</sub>                  | 2.0         | 96%               |
| NiCl <sub>2</sub>                  | 2.0         | 78%               |
| ZnSO <sub>4</sub>                  | 2.0         | 0%                |
| K <sub>4</sub> Fe(CN) <sub>6</sub> | 2.0         | 98%               |

| Chemical         | Concn. (mM) | Residual activity |
|------------------|-------------|-------------------|
| BME              | 2.0         | 98%               |
| NEM              | 2.0         | 79%               |
| EDTA             | 5.0         | 102%              |
| NaN <sub>3</sub> | 20.0        | 101%              |
| Proclin          | 0.045%      | 58%               |
| Na-cholate       | 0.10%       | 109%              |
| SDS              | 0.05%       | 0%                |
| Triton X-100     | 0.10%       | 113%              |
| Tween 20         | 0.10%       | 115%              |

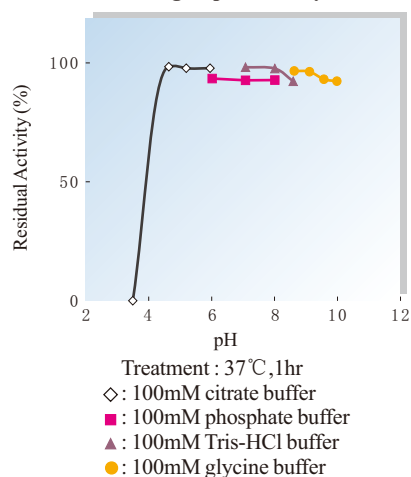
**Fig. 1 pH Activity**



**Fig. 3 Temperature activity**



**Fig. 2 pH Stability**



**Fig. 4 Thermal stability**

