

ENZYMES

BY

SORACHIM

D-Lactate Dehydrogenase from microorganism

LCD-442

SPECIFICATIONS

Product name	(R)-Lactate: NAD ⁺ oxidoreductase
EC	1.1.1.28
Appearance	White amorphous powder lyophilized
Activity	Grade II, 1100U/mg-protein or more
Contaminants	Malate dehydrogenase $\leq 1.0 \times 10^{-2}\%$ Myokinase $\leq 1.0 \times 10^{-2}\%$ Pyruvate kinase $\leq 1.0 \times 10^{-3}\%$ NADH oxidase $\leq 1.0 \times 10^{-3}\%$ GOT $\leq 5.0 \times 10^{-3}\%$ GPT $\leq 5.0 \times 10^{-3}\%$
Stability	Stable at -20°C for at least 12 months
Molecular weight	approx. 140,000
Isoelectric point	4.0
Michaelis constant	6.4×10^{-4} M (pyruvate, pH 7.0)
Inhibitors	Ag ²⁺ , Hg ²⁺ , SH-reagents
Optimum pH	5.0 – 7.0
Optimum temperature	30 – 37 °C
pH Stability	pH 5.0 – 9.0 (25 °C, 48hr)
Thermal stability	below 45 °C (pH 7.0, 15min)

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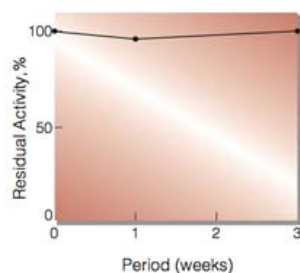


Fig.1. Stability (Powder form)
(kept under dry condition, 37°C)

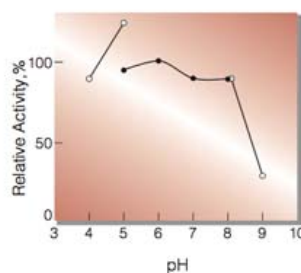


Fig.2. pH-Activity
[in 57mM buffer solution: pH 4-5, acetate; pH 5-8, K-phosphate; pH 8-9, Tris-HCl]

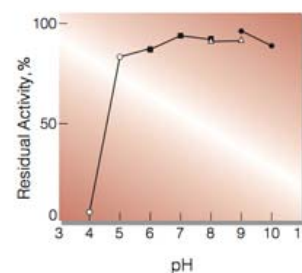


Fig.4. pH-Stability
[25°C, 48hr-treatment with 0.1M buffer solution: pH 4-6, dimethylglutaric acid-NaOH; pH 6-8, K-phosphate; pH 8-9, Tris-HCl; pH 9-10, glycine-NaOH. Enzyme concentration: 10U/ml]

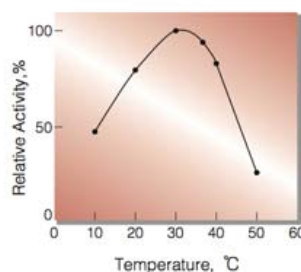


Fig.3. Temperature activity
[in 67mM K-phosphate buffer, pH 7.4]

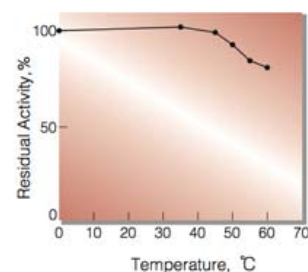


Fig.5. Temperature stability
[15min-treatment with 50mM K-phosphate buffer, pH 7.0. Enzyme concentration: 10U/ml]