

# ENZYMES

BY

# SORACHIM

## D-Lactate Dehydrogenase from microorganism

### LCD-221

#### SPECIFICATIONS

Product name	(R)-Lactate: NAD <sup>+</sup> oxidoreductase
EC	1.1.1.28
Appearance	White amorphous powder lyophilized
Activity	Grade II, 400U/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 $-20^{\circ}\text{C}$ for at least 12 months
Molecular weight	approx. 140,000
Isoelectric point	4.0
Michaelis constant	$6.4 \times 10^{-4}$ M (pyruvate, pH 7.0)
Inhibitors	Ag <sup>2+</sup> , Hg <sup>2+</sup> , 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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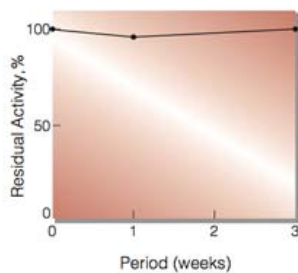
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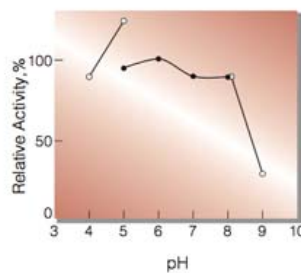
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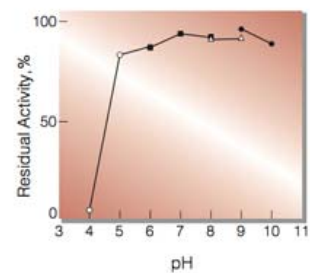
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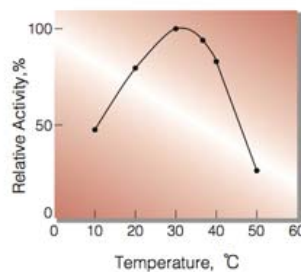
**Fig.1. Stability (Powder form)**  
[kept under dry condition, 37°C ]



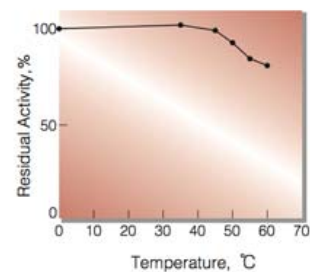
**Fig.2. pH-Activity**  
[in 57mM buffer solution: pH 4-5, acetate; pH 5-8, K-phosphate; pH 8-9, Tris-HCl ]



**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 ]