

ENZYMES

BY

SORACHIM

Lactate Dehydrogenase from Pig heart

LCD-209

SPECIFICATIONS

Product name	(S)-Lactate: NAD ⁺ oxidoreductase
EC	1.1.1.27
Appearance	Crystalline suspension in 1.6M ammonium sulfate solution
Activity	Grade II, 2,000 U/ml or more
Contaminants	Malate dehydrogenase : $\leq 5.0 \times 10^{-2}\%$ GPT : $\leq 3.0 \times 10^{-2}\%$ Pyruvate kinase : $\leq 3.0 \times 10^{-2}\%$
Stabilizers	NADH, 2-mercaptoethanol
Stability	Stable at 2-8°C for at least 12 months
Molecular weight	115,000 \pm 6,500
Michaelis constants	2.5×10^{-2} M (Lactate), 1.0×10^{-4} M (Pyruvate)
Structure	4 subunits per mol of enzyme
Inhibitors	I ⁻ , Ag ⁺ , Hg ²⁺ , p-chloromercuribenzoate, LDH inhibitors (formed from NADH)
Optimum pH	6.0 - 7.4
Optimum temperature	above 60°C
pH Stability	pH 6.0 - 8.0 (23°C, 22hr)
Thermal stability	below 50°C (pH 7.4, 10min)

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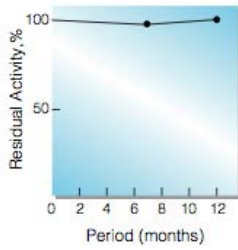


Fig.1. Stability (Liquid form at 5°C)

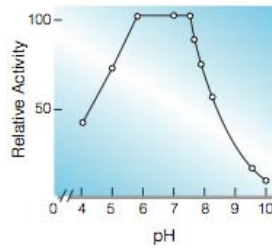


Fig.2. pH-Activity

[25°C, in 0.1M buffer slution:
pH4.0-5.0, acetate;
pH6.0-7.0, Veronal-CH₃COONa-HCl;
pH7.4, phosphate; pH8.0-9.0,
Tris-HCl; pH 9.5-10 glycine-NaOH]

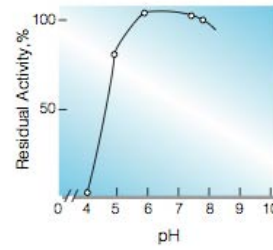


Fig.4. pH-Stability

[23°C, 22hr-treatment with 0.1M
buffer: pH4.0-6.0, acetate;
pH6.0-7.0, Veronal-CH₃COONa-HCl;
pH7.4, phosphate; pH8.0, Tris-HCl]

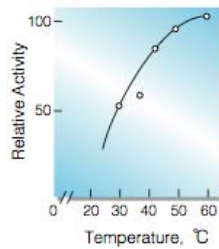


Fig.3. Temperature activity

[in 67mM phosphate buffer, pH7.4]

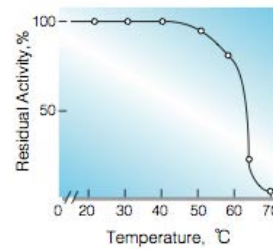


Fig.5. Thermal stability

[10min-treatment with 0.1M
phosphate buffer, pH7.4]