

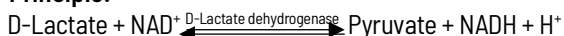
SPECIFICATION SHEET

Product Name: D-Lactate Dehydrogenase
Catalog # LD01D1-E311H

Product Description: D-Lactate dehydrogenase is a diagnostic grade reagent from a microorganism host. This enzyme is useful for enzymatic determination of numerous metabolites, e.g., ATP, ADP, glucose, creatinine, pyruvate, lactate and glycerol, and of enzyme activities, e.g., GPT, PK, and CPK when coupled with the related enzymes.

EC 1.1.1.28

Storage and Stability: Product can be stored at 2~8°C for transportation process up to ten days but long-term storage should be at -20°C.

Principle:


Unit Definition	: One unit causes the oxidation of one micromole of NADH per minute at pH 7.0 and 25°C	
Appearance	: White amorphous powder, lyophilized	
Activity	: ≥220 U/mg solid	
Contaminants	: AST/GOT and ALT/GPT	all ≤5.0 × 10 ⁻³ %
	Malate dehydrogenase	≤1.0 × 10 ⁻² %
	NADH oxidase	≤1.0 × 10 ⁻³ %
	Myokinase	≤1.0 × 10 ⁻² %
	Pyruvate Kinase	≤1.0 × 10 ⁻³ %
Molecular Weight	: 39.0 kDa	
Isoelectric Point	: 6.1	
Michaelis Constant	: 6.41 × 10 ⁻⁴ M (Pyruvate, pH 7.0)	
Inhibitors	: Co ²⁺ , Fe ³⁺ , Cu ²⁺ , Ag ⁺ , Hg ²⁺ , SDS	
Optimum pH	: 7.0	(Figure 1)
Optimum Temperature	: 40°C	(Figure 2)
pH Stability	: pH 4.5 – 10.5 (25°C, 20 hr)	(Figure 3)
Thermal Stability	: Below 50°C (pH 7.0, 15 min)	(Figure 4)
Effect of Various Chemicals	: (Table 1)	

Table 1. Effect of Various Chemicals on D-Lactate Dehydrogenase

The enzyme was dissolved in 0.05 M K-phosphate buffer, pH 7.5 containing 0.1% of BSA (40 U/mL) and incubated with each chemical at 25°C for 1 hr.

Chemical	Conc. (mM)	Residual activity (%)	Chemical	Conc. (mM)	Residual activity (%)
None	—	100	BME	2	91
CaCl ₂	2	94	Hydroxylamine	2	93
MgSO ₄	2	95	EDTA	5	95
ZnSO ₄	2	86	NaF	20	90
NiCl ₂	2	89	NaN ₃	20	96
CoCl ₂	2	58	Borate	50	89
MnCl ₂	2	96	Proclin-300	0.045% (v/v)	90

Table 1(Continued)

Chemical	Conc. (mM)	Residual activity (%)	Chemical	Conc. (mM)	Residual activity (%)
FeCl ₃	2	63	SDS	0.05% (w/v)	47
CuSO ₄	2	78	Na-Cholate	0.1% (w/v)	97
AgNO ₃	2	6	Tween-20	0.1% (v/v)	96
HgSO ₄	2	1	Triton X-100	0.1% (v/v)	97
NEM	2	80	Span-20	0.1% (v/v)	94
IAA	2	89	Brij-35	0.1% (w/v)	94

