

SPECIFICATION SHEET

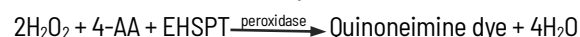
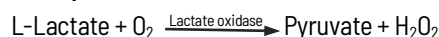
Product Name: Lactate Oxidase
Catalog # LX01D1-E311H

Product Description: Lactate Oxidase is a diagnostic grade reagent from a microorganism host. This enzyme is useful for enzymatic determination of L-lactate in clinical analysis.

EC 1.13.12.4

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:



The appearance of quinoneimine dye is measured at 555 nm by spectrophotometry.

Unit Definition	: One unit causes the formation of one micromole of hydrogen peroxide (half a micromole of quinoneimine dye) per minute at pH 7.5 and 37°C.	
Appearance	: Yellowish amorphous powder, lyophilized	
Activity	: ≥80 U/mg solid	
Molecular Weight	: 42.0 kDa	
Contaminants	: Pyruvate oxidase	≤1.0 × 10 ⁻³ %
	: Cholesterol oxidase	≤1.0 × 10 ⁻³ %
	: Uricase	≤1.0 × 10 ⁻³ %
	: Glucose oxidase	≤1.0 × 10 ⁻³ %
Isoelectric Point	: 5.75	
Michaelis Constant	: 1.0 × 10 ⁻³ M (L-Lactate)	
Inhibitors	: Fe ³⁺ , Ag ⁺ , Hg ²⁺ , SDS	
Optimum pH	: 7.5	(Figure 1)
Optimum Temperature	: 30 ~ 35°C	(Figure 2)
pH Stability	: pH 5.5-10.5 (25°C, 16 hr)	(Figure 3)
Thermal Stability	: Below 60°C (pH 7.0, 10 min)	(Figure 4)
Effect of Various Chemicals	: (Table 1)	

Table 1. Effect of Various Chemicals on Lactate Oxidase

The enzyme dissolved in 20 mM ACE-NaOH buffer, pH 7.0 (49 U/mL) was incubated with each chemical at 25°C for 1 hr.

Chemical	Conc. (mM)	Residual activity (%)	Chemical	Conc. (mM)	Residual activity (%)
None	—	100	BME	2	95
CaCl ₂	2	98	Hydroxylamine	2	93
MgSO ₄	2	90	EDTA	5	93
ZnSO ₄	2	99	NaF	20	95
NiCl ₂	2	87	NaN ₃	20	95
CoCl ₂	2	93	Proclin-300	0.045% (v/v)	100
MnCl ₂	2	89	SDS	0.05% (w/v)	0
FeCl ₃	2	74	Na-Cholate	0.1% (w/v)	93

Table 1 (Continued)

Chemical	Conc. (mM)	Residual activity (%)	Chemical	Conc. (mM)	Residual activity (%)
CuSO ₄	2	91	Tween-20	0.1% (v/v)	104
AgNO ₃	2	42	Triton X-100	0.1% (v/v)	106
HgSO ₄	2	0	Span-20	0.1% (v/v)	107
NEM	2	92	Brij-35	0.1% (w/v)	104

Fig.1. pH-Activity

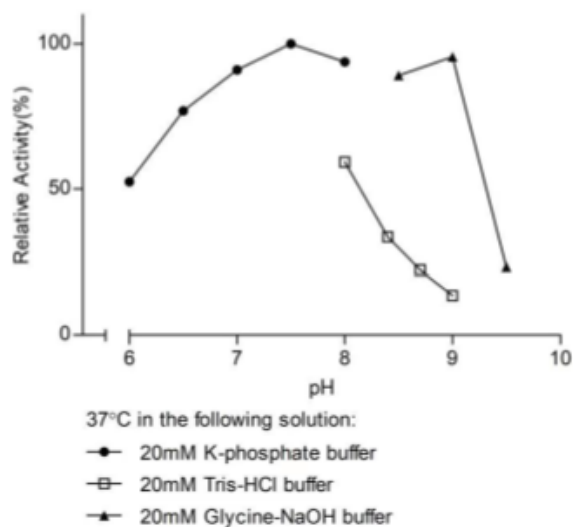


Fig.2. Temperature Activity

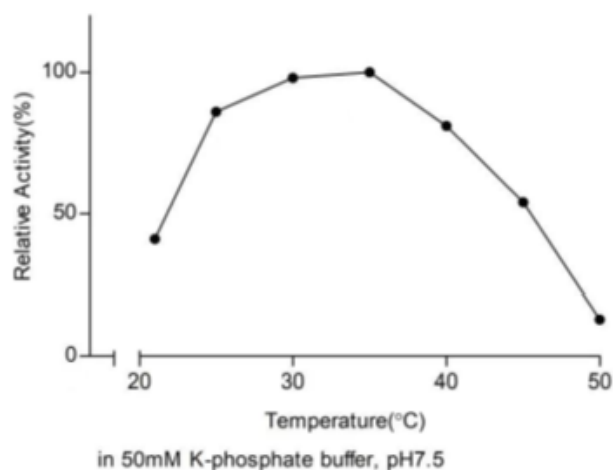


Fig.3. pH Stability

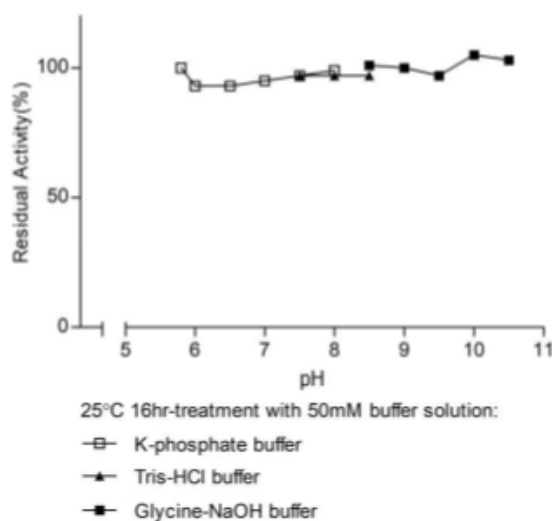


Fig.4. Thermal Stability

