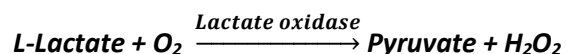


LACTATE OXIDASE

(L-Lactate: oxygen oxidoreductase E.C 1.1.3.2)



Preparation and Specification

Appearance:	Yellow amorphous powder, lyophilized
Specific activity:	90U/mg- solid or more
Source:	Microorganism
Storage temperature:	-20°C
Unit definition:	One unit causes the formation of one micromole of hydrogen peroxide per minute at pH7.0 at 37°C.

Properties

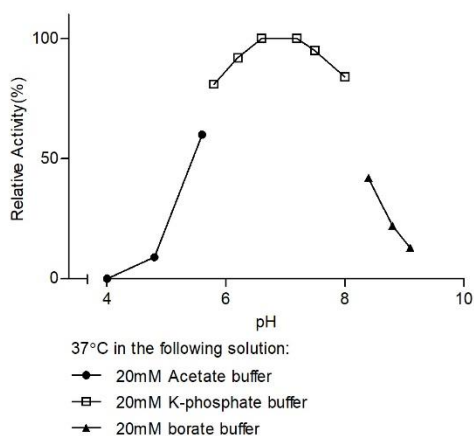
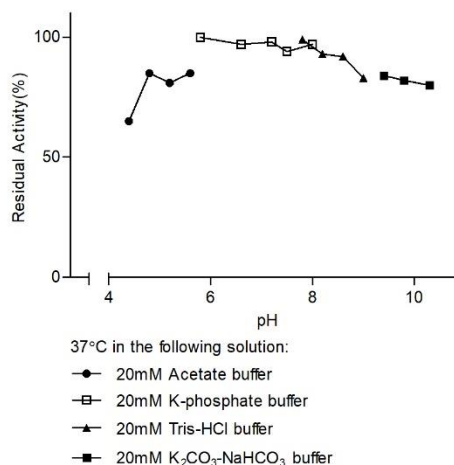
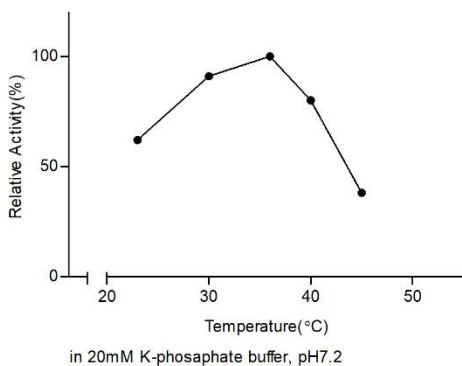
Molecular weight:	50 kDa (SDS-PAGE)	
Isoelectric point:	pH 4.3	
Michaelis constant:	2.5 X 10 ⁻³ M (L-Lactate)	
Inhibitors:	Fe ³⁺ , SDS	
Optimum pH:	6.5-7.5	(Fig.1)
Optimum temperature:	37°C	(Fig.2)
pH Stability:	5.5 –8.5 (25°C, 20hr)	(Fig.3)
Thermal stability:	Stable at 60°C and below (pH 7.2, 10min)	(Fig.4)
Effect of various chemicals:		(Table 1)

Table 1.
Effect of Various Chemicals on Lactate Oxidase

(The enzyme solution dissolved in 20mM k-phosphate buffer, pH 7.0 containing 0.1% Na-cholate, pH7.0 was incubated with each chemical at 25°C for 1hr.)

Chemical	Concn.(mM)	Residual activity
CaCl ₂	2.0	85
CoCl ₂	2.0	94
FeCl ₃	2.0	78
MnCl ₂	2.0	89
ZnSO ₄	2.0	99
NiCl ₂	2.0	96
CuSO ₄	2.0	88
MgCl ₂	2.0	96

Chemical	Concn.(mM)	Residual activity
None	-	100
BME	2.0	112
EDTA	2.0	107
NaN ₃	2.0	105
Na-cholate	0.10%	104
SDS	0.05%	54
Triton X-100	0.10%	109
Tween 20	0.10%	108

Fig.1. pH-Activity

Fig.3. pH Stability

Fig.2. Temperature Activity

Fig.4. Thermal Stability
