

CHOLESTEROL OXIDASE

from Microorganism

Cholesterol : oxygen oxidoreductase (EC 1-1-3-6)



PREPARATION and SPECIFICATION

Appearance	: Yellowish amorphous powder, lyophilized	
Activity	: 12U/mg-solid or more	
Contaminants	: Catalase	≤1.0×10 ⁻¹ %
	: Cholesterol esterase	≤1.0×10 ⁻² %
Stabilizers	: BSA, amino acids	

PROPERTIES

Stability	: Product shipped on dry ice, but long-term storage should be at -20°C.	
Molecular weight	: approx. 60 kDa (SDS-PAGE)	
Isoelectric point	: 8.4	
Michaelis constant	: 1.2×10 ⁻⁵ M (Cholesterol)	
Inhibitors	: Cu ²⁺ , Hg ²⁺ , Ag ⁺	
Optimum pH	: 6.5~7.2	(Fig.1)
Optimum temperature	: 55°C	(Fig.2)
pH stability	: pH 5.5~10.0 (25°C, 20hr)	(Fig.3)
Thermal stability	: below 50°C (pH 7.0, 15 min)	(Fig.4)
Substrate specificity	: (Table 1)	
Effect of various chemicals	: (Table 2)	

UNIT DEFINITION

One unit is defined as the amount of enzyme which liberates 1 μmol of Δ⁴-Cholest-3-one per minute at 37°C at pH 7.0.

APPLICATIONS

This enzyme is useful for enzymatic determination of cholesterol in serum when coupled with cholesterol in clinical analysis.

Manufactured in an ISO 9001 certified facility: Suzhou SignalChem Biotechnologies Corp.

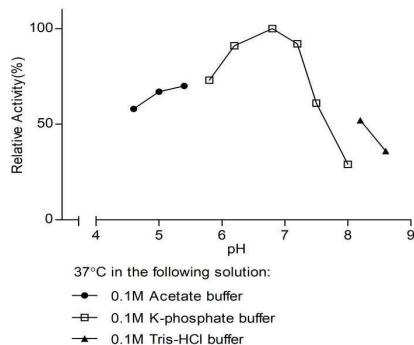
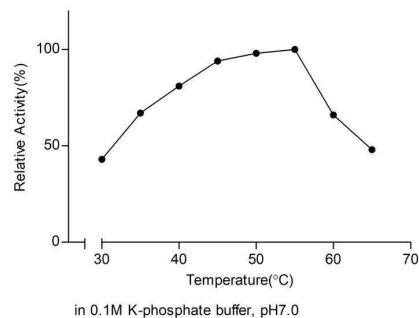
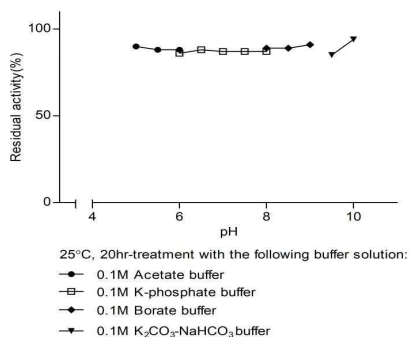
Table 1. Substrate Specificity of Cholesterol oxidase

Substrate(0.1mM)	Relative activity(%)	Substrate(0.1mM)	Relative activity(%)
Cholesterol	100	Ergosterol	32
Pregnenolone	50	Lanosterol	1
β -Cholestanol	61	Testosterone	0
β -Sitosterol	128	Androsterone	2
Stigmasterol	30	Dehydroisoandrosterone	24
5 β -Pregnane-3 α ,20 α -diol	0		

Table 2. Effect of Various Chemicals on Cholesterol oxidase

The enzyme was dissolved in 100mM phosphate buffer, pH 7.0 (1.0 U/ml) and incubated with each chemical at 25°C for 1hr.

Chemical	Concn.(mM)	Residual activity(%)	Chemical	Concn.(mM)	Residual activity(%)
None	—	100	BME	2	96
CaCl ₂	2	93	Hydroxylamine	2	100
MgSO ₄	2	97	EDTA	5	95
ZnSO ₄	2	95	NaF	20	98
NiCl ₂	2	94	NaN ₃	20	99
CoCl ₂	2	98	Borate	50	100
MnCl ₂	2	100	Proclin-300	0.045% (v/v)	94
FeCl ₃	2	86	SDS	0.05%	94
CuSO ₄	2	57	Na-Cholate	0.1%	97
AgNO ₃	2	0	Tween-20	0.1% (v/v)	99
HgSO ₄	2	0	Triton X-100	0.1% (v/v)	97
NEM	2	99	Span-20	0.1% (v/v)	89

Fig.1. pH-Activity

Fig.2. Temperature Activity

Fig.3. pH Stability

Fig.4. Thermal Stability
