

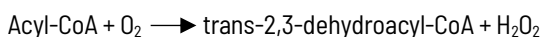
SPECIFICATION SHEET

Product Name: Acyl-CoA Oxidase
Catalog # AC01D1-E311H

Product Description: Acyl-CoA Oxidase is a diagnostic grade reagent from a microorganism host. This enzyme is useful for enzymatic determination of fatty acid when coupled with Acyl-CoA synthetase in clinical analysis.

EC 1.3.3.6

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 is defined as the amount of enzyme which generates 1 μmole of H_2O_2 per minute at 37°C under the conditions specified in the assay procedure.	
Appearance	: Yellowish amorphous powder, lyophilized	
Activity	: ≥ 15 U/mg solid	
Activator	: Triton X-100	
Stabilizers	: FAD	
Molecular Weight	: 77.8 kDa	
Isoelectric Point	: 6.2	
Michaelis Constant	: 1.591×10^{-4} M (Palmitoyl-CoA)	
Inhibitors	: Fe^{3+} , Ag, Hg^{2+}	
Optimum pH	: 7.5	(Figure 1)
Optimum Temperature	: 40°C	(Figure 2)
pH Stability	: pH 6.5 – 7.5 (25°C, 18 hr)	(Figure 3)
Thermal Stability	: Below 45°C (pH 7.5, 15 min)	(Figure 4)
Effect of Various Chemicals	: (Table 1)	

Table 1. Effect of Various Chemicals on Acyl-CoA Oxidase

The enzyme dissolved in 10 mM MOPS buffer, pH 7.5 (ca.8.5 U/mL) containing 3 mM ATP, 1 mM FAD & 0.1% BSA was incubated with each chemical at 37°C for 2 hr.

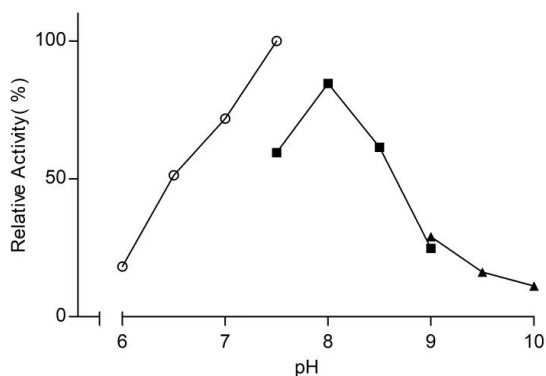
The enzyme dissolved in 10 mM K-phos. buffer, pH 7.0 (ca.8.5 U/mL) containing 3 mM ATP, 1 mM FAD & 0.1% BSA was incubated with each chemical at 37°C for 2 hr.

Chemical	Conc. (mM)	Residual activity (%)		Chemical	Conc. (mM)	Residual activity (%)	
		MOPS	K-Phosphate			MOPS	K-Phosphate
None	—	100		BME	1	68.4	86.8
CaCl_2	1	67.3	70.5	Hydroxylamine	1		77.6
MgSO_4	1	98.8	74.5	EDTA	2.5	90.5	52.1
ZnSO_4	1	76.7	87.7	NaF	10	79.6	
NiCl_2	1	166.3	68.4	NaN_3	20		85.9
CoCl_2	1	413.6	35.6	Proclin-300	0.0225% (v/v)	80.0	75.5
MnCl_2	1	64.1	50.0	FAD	1	76.7	73.5
FeCl_3	1	29.4	9.1	SDS	0.03% (w/v)	101.0	71.5

Table 1 (Continued)

Chemical	Conc. (mM)	Residual activity (%)		Chemical	Conc. (mM)	Residual activity (%)	
		MOPS	K-Phosphate			MOPS	K-Phosphate
CuSO ₄	1	0	91.9	Na-Cholate	0.05% (w/v)	90.5	66.3
AgNO ₃	1	1.0	4.0	Tween-20	0.05% (v/v)	115.9	135.9
HgSO ₄	1	11.6	12.2	Triton X-100	0.05% (v/v)	151.6	134.9
NEM	1	86.2	67.4	Span-20	0.05% (v/v)	97.7	54.0
IAA	1	0	71.5	Brij-35	0.05% (w/v)	129.5	133.7

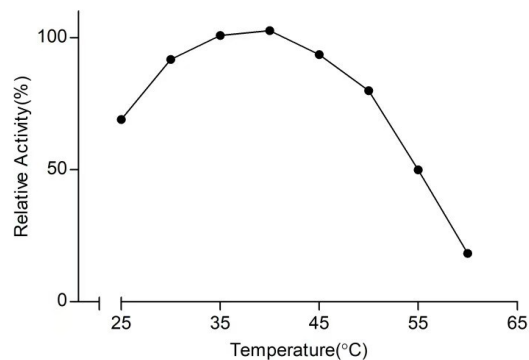
Fig.1. pH Activity



37°C in the following 100mM buffer solution:

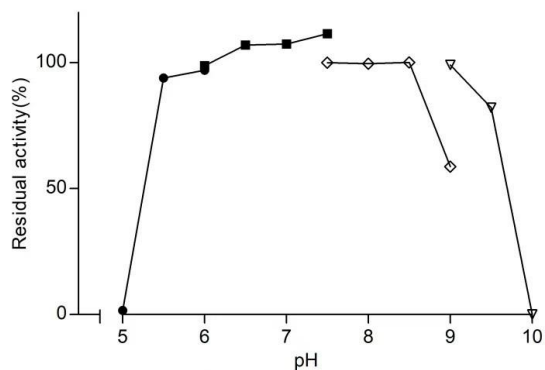
- K-phosphate buffer
- Tris-HCl buffer
- ▲ Borate buffer

Fig.2. Temperature Activity



in 0.2M Tris-HCl buffer, pH7.5

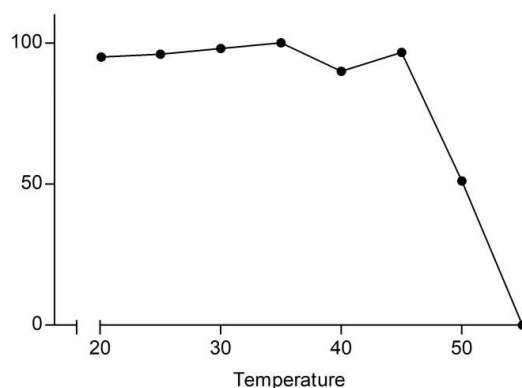
Fig.3. pH Stability



25°C, 18hr-treatment with following 100mM buffer solution:

- Acetate buffer
- K-phosphate buffer
- ◇ Tris-HCl buffer
- ▽ Borate buffer

Fig.4. Thermal Stability



15-min treatment with 0.1M K-Phosphate buffer, pH7.5