北京奇松生物科技有限公司
http://www.shiyanshiji.com

ACYL-COA OXIDASE

Acyl-CoA:oxygen-2-oxidoreductase

REACTION:

$$Acyl\text{-}CoA + O_2 \xrightarrow{ACO} trans\text{-}2,3\text{-}Dehydroacyl\text{-}CoA + H_2O_2$$

PRODUCT DESCRIPTION

Catalog No.:	qs50053
Appearance:	Yellow amorphous powder
Source:	Microorganism
Enzyme Commission Number:	EC 1.3.3.6
CAS Number:	61116-22-1
Storage temperature:	-20℃
Specific activity:	≥ 30U/mg protein
Unit definition:	One unit will convert one micromole of Acyl-CoA to trans-2, 3-dehydroacyl-CoA per min at pH 7.5 at 37℃.

PROPERTIES

Molecular weight:	78 kDa (SDS-PAGE)	
Isoelectric point:	6.7	
Michaelis constant:	1. 0×10^{-5}M (Palmitoyl-CoA)	
Optimum pH:	8.5	{Fig. 1}
Optimum temperature:	37~40℃	{Fig. 3}
pH Stability:	6.0~8.5 (25℃, 15hr)	{Fig. 2}
Thermal stability:	< 45℃ (pH 7.5, 15min)	{Fig. 4}
Inhibitors:	Zn^{2+},Cu^{2+} ,Co^{2+} ,Ni^{2+},NEM,SDS,Proclin	
Effect of various chemicals:		{Table 1}

Table 1.

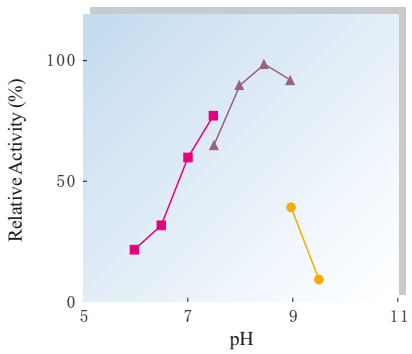
Effect of Various Chemicals on ACO

[The enzyme dissolved in 50mM MOPS buffer, pH 7.5 (10U/ml) was incubated with each chemical at 37℃ for 2hr.]

Chemical	Concn. (mM)	Residual activity
None	-	100%
$CaCl_2$	2.0	98%
$CoCl_2$	2.0	60%
$CuSO_4$	2.0	5%
$FeCl_3$	2.0	86%
$MgSO_4$	2.0	103%
$MnSO_4$	2.0	88%
$NiCl_2$	2.0	10%
$ZnSO_4$	2.0	5%
BME	2.0	89%

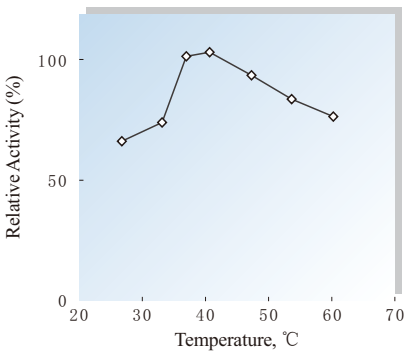
Chemical	Concn. (mM)	Residual activity
NEM	2.0	72%
EDTA	5.0	105%
NaN_3	20.0	100%
Proclin	0.045%	61%
FAD	1.0	123%
Na-cholate	0.10%	91%
SDS	0. 05%	34%
Triton X-100	0.10%	96%
Tween 20	0.10%	110%

Fig. 1 pH Activity



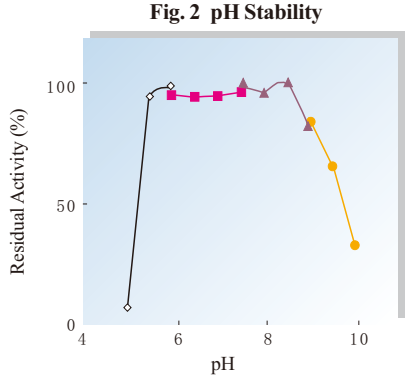
■ : 100mM phosphate buffer
▲ : 100mM Tris-HCl buffer
● : 100mM Borate buffer

Fig. 3 Temperature activity



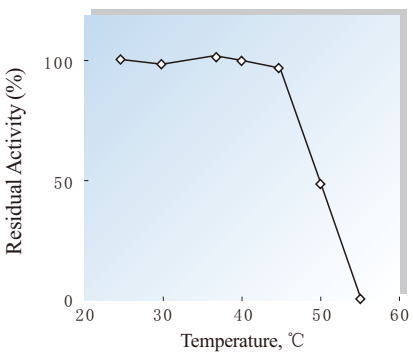
Buffer: 200mM Tris-HCl buffer, pH 7.5

Fig. 2 pH Stability



Treatment : 25℃,15hr
◇ : 100mM acetate buffer, 1mM FAD, 0.1% BSA
■ : 100mM phosphate buffer, 1mM FAD, 0.1% BSA
▲ : 100mM Tris-HCl buffer, 1mM FAD, 0.1% BSA
● : 100mM Borate buffer, 1mM FAD, 0.1% BSA

Fig. 4 Thermal stability



Treatment: 100mM phosphate buffer, 0.1% BSA,1mM FAD pH 7.5, 15min