

ACYL-CoA SYNTHETASE

Acid:CoA ligase (AMP forming)

REACTION:



PRODUCT DESCRIPTION

Catalog No.:	SDZ500321
Appearance:	White amorphous powder
Source:	Microorganism
Enzyme Commission Number:	EC 6.2.1.3
CAS Number:	9013-18-7
Storage temperature:	-20°C
Specific activity:	≥ 5U/mg protein
Unit definition:	One unit will convert one micromole of potassium oleate to acyl-CoA per min at pH 7.5 at 37°C.

PROPERTIES

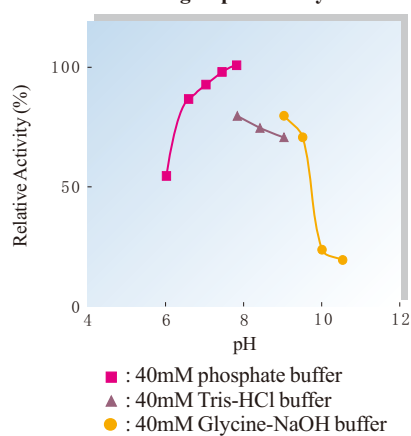
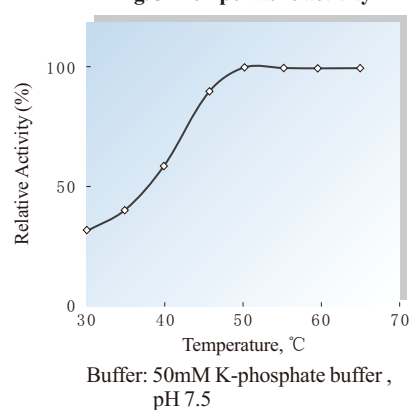
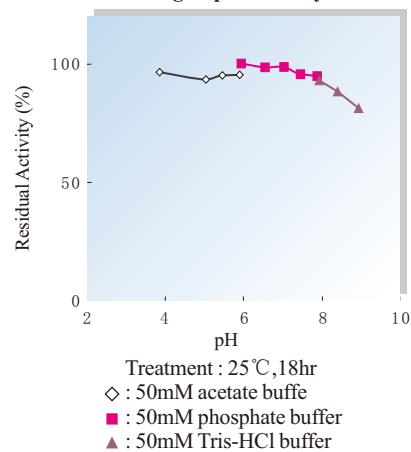
Molecular weight:	58 kDa (SDS-PAGE)	
Isoelectric point:	5.2	
Michaelis constant:	$3.0 \times 10^{-4} \text{M}$ (oleic acid)	
Optimum pH:	7.5	{Fig. 1}
Optimum temperature:	50°C	{Fig. 3}
pH Stability:	6.0-7.0 (25°C, 18hr)	{Fig. 2}
Thermal stability:	< 55°C (pH 7.5, 10min)	{Fig. 4}
Inhibitors:	$\text{Cu}^{2+}, \text{Fe}^{3+}$	
Effect of various chemicals:		{Table 1}

Table 1.**Effect of Various Chemicals on ACS**

[The enzyme dissolved in 50mM Tris-HCl buffer, pH 7.5 (5U/ml) was incubated with each chemical at 37°C for 2hr.]

Chemical	Concn. (mM)	Residual activity
None	-	100%
CaCl ₂	2.0	93%
CoCl ₂	2.0	95%
CuSO ₄	2.0	0%
FeCl ₃	2.0	60%
MgSO ₄	2.0	87%
MnSO ₄	2.0	93%
NiCl ₂	2.0	89%
ZnSO ₄	2.0	92%
BME	2.0	97%

Chemical	Concn. (mM)	Residual activity
NEM	2.0	80%
EDTA	5.0	92%
NaN ₃	20.0	94%
Proclin	0.045%	83%
ATP	2.0	88%
Na-cholate	0.10%	94%
SDS	0.05%	100%
Triton X-100	0.10%	94%
Tween 20	0.10%	92%

Fig. 1 pH Activity**Fig. 3 Temperature activity****Fig. 2 pH Stability****Fig. 4 Thermal stability**