

GLYCEROL KINASE

ATP:glycerol-3-phosphotransferase

REACTION:



PRODUCT DESCRIPTION

Catalog No.:	SDZ500190
Appearance:	White amorphous powder
Source:	Microorganism
Enzyme Commission Number:	EC 2.7.1.30
CAS Number:	9030-66-4
Storage temperature:	-20°C
Specific activity:	≥ 180U/mg protein
Unit definition:	One unit will convert one micromole of glycerol to glycerol-3-phosphate per min at pH 7.9 at 37°C.

PROPERTIES

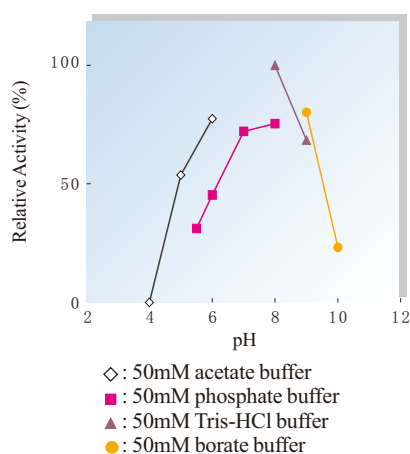
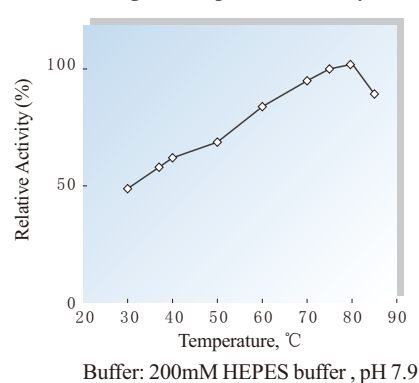
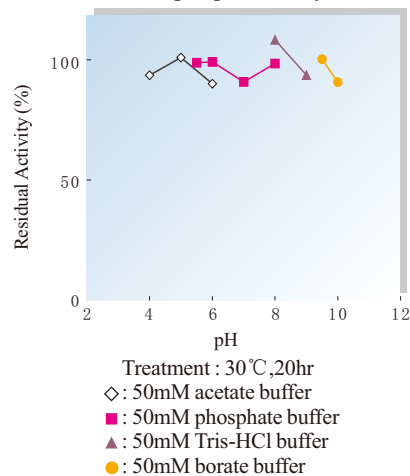
Molecular weight:	55 kDa (SDS-PAGE)	
Isoelectric point:	5.1	
Michaelis constant:	3.8×10^{-5} M (Glycerol)	
Optimum pH:	8.0	{Fig. 1}
Optimum temperature:	80°C	{Fig. 3}
pH Stability:	5.0~10.0 (30°C, 20hr)	{Fig. 2}
Thermal stability:	< 60°C (pH 7.5, 30min)	{Fig. 4}
Inhibitors:	Fe ³⁺ , Proclin, SDS	
Effect of various chemicals:		{Table 1}

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

[The enzyme dissolved in 100mM Gly-Gly buffer, pH 8.0 (10U/ml) was incubated with each chemical at 37°C for 2hr.]

Chemical	Concn. (mM)	Residual activity
None	-	100%
CaCl ₂	2.0	96%
CoCl ₂	2.0	98%
CuSO ₄	2.0	94%
FeCl ₃	2.0	56%
MgSO ₄	2.0	83%
MnSO ₄	2.0	97%
NiCl ₂	2.0	105%
ZnSO ₄	2.0	98%
BME	2.0	94%

Chemical	Concn. (mM)	Residual activity
NEM	2.0	86%
EDTA	5.0	97%
NaN ₃	20.0	101%
Proclin	0.045%	2%
Na-cholate	0.10%	102%
SDS	0.05%	1%
Triton X-100	0.10%	111%
Tween 20	0.10%	92%
Boric Acid-Borax	2.0	98%

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