

HEXOKINASE

from Microorganism

ATP: D-Hexose 6-phosphotransferase (EC 2.7.1.1)



PREPARATION and SPECIFICATION

Appearance	: White amorphous powder, lyophilized	
Activity	: 150U/mg-solid or more	
Contaminants	: Phosphoglucose isomerase	$\leq 1.0 \times 10^{-1}\%$
	: 6-Phosphogluconate dehydrogenase	$\leq 1.0 \times 10^{-2}\%$
	: Glucose-6-phosphate dehydrogenase	$\leq 1.0 \times 10^{-2}\%$
	: Myokinase	$\leq 1.0 \times 10^{-2}\%$
	: Glutathione reductase	$\leq 5.0 \times 10^{-1}\%$

PROPERTIES

Stability	: Product shipped on dry ice, but long-term storage should be at -20°C .	
Molecular weight	: 55.1 kDa	
Isoelectric point	: 5.8	
Michaelis constant	: $6.1 \times 10^{-5}\text{M}$ (D-Glucose), $9.6 \times 10^{-5}\text{M}$ (ATP)	
Inhibitors	: Co^{2+} , Fe^{3+} , Hg^{2+} , Ag^{+} , SDS	
Optimum pH	: 8.0 ~ 9.0	(Fig.1)
Optimum temperature	: $40 \sim 50^{\circ}\text{C}$	(Fig.2)
pH stability	: pH 5.0~9.5 (25 $^{\circ}\text{C}$, 20hr)	(Fig.3)
Thermal stability	: below 40°C (pH 7.5, 15 min)	(Fig.4)
Effect of various chemicals	: (Table 1)	

UNIT DEFINITION

One unit causes the formation of one micromole of NADH per minute at pH 8.0 at 30°C

APPLICATIONS

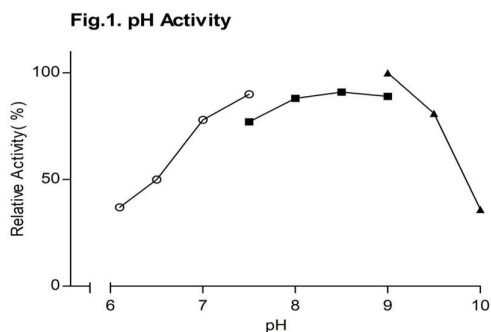
This enzyme is useful for enzymatic determination of glucose, adenosine-5'-triphosphate (ATP) and creatine phosphokinase when coupled with glucose-6-phosphate dehydrogenase.

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

Table 1. Effect of Various Chemicals on Hexokinase

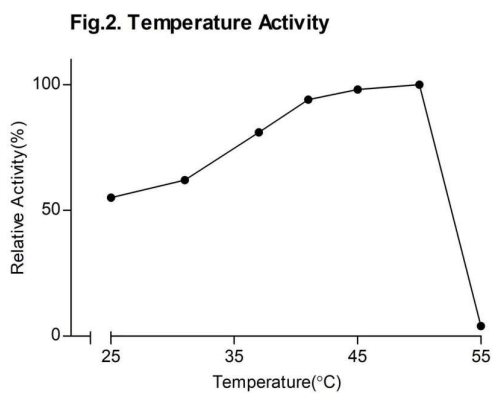
The enzyme solution was dissolved in 50mM K-phosphate buffer, pH 7.5 containing 0.1% of BSA (10U/ml) and incubated with each chemical at 25°C for 1hr.

Chemical	Concn.(mM)	Residual activity(%)	Chemical	Concn.(mM)	Residual activity(%)
None	—	100	IAA	2	84
CaCl ₂	2	88	Hydroxylamine	2	88
MgSO ₄	2	92	EDTA	5	84
ZnSO ₄	2	130	NaF	20	85
NiCl ₂	2	82	NaN ₃	20	84
CoCl ₂	2	43	Borate	50	87
MnCl ₂	2	87	Proclin-300	0.045% (v/v)	86
FeCl ₃	2	23	SDS	0.05%	55
CuSO ₄	2	82	Na-Cholate	0.1%	87
AgNO ₃	2	32	Tween-20	0.1% (v/v)	85
HgSO ₄	2	0	Triton X-100	0.1% (v/v)	86
NEM	2	83	Span-20	0.1% (v/v)	86
BME	2	85	Brij-35	0.1%	90

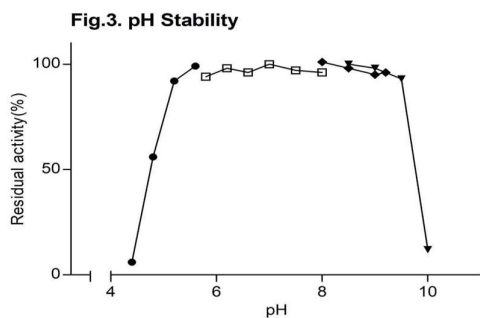


37°C in the following buffer solution:

- 50mM PIPES-NaOH buffer
- 50mM Tris-HCl buffer
- ▲ 50mM Glycine-NaOH buffer

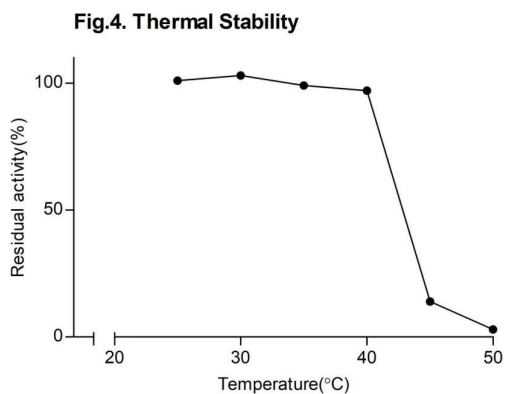


in 50mM K-phosphate buffer, pH 7.5



25°C, 20hr-treatment with following buffer solution:

- 0.1M Acetate buffer
- 0.1M K-phosphate buffer
- ◆ 0.1M Tris-HCl buffer
- ▼ 0.1M Glycine-NaOH buffer



15min-treatment with 50mM K-phosphate buffer, pH7.5