

Pyruvate Kinase (PK)

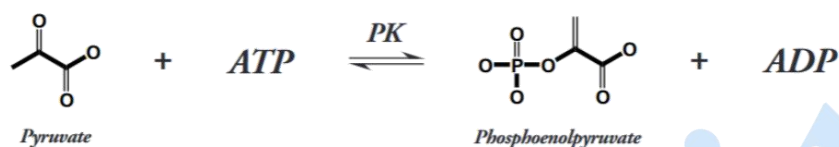
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Pyruvate kinase (PK, EC 2.7.1.40) is a key enzyme in the glycolytic pathway, and its standard catalytic reaction is as follows: Phosphoenolpyruvate (PEP) + ADP → Pyruvate + ATP.

Storage temperature

-20°C, store in the dark.

Reaction



Product description

Appearance: White amorphous powder.

Source: Microorganism.

Enzyme Commission Number: EC 2.7.1.40.

CAS Number: 9001-59-6.

Storage temperature: -20°C.

Specific activity: ≥ 300U/mg protein.

Unit definition: One unit will convert one micromole of phosphoenolpyruvate(PEP) to pyruvate per min at pH 7.2 at 30°C.

Properties

Source: Microorganism

Isoelectric point: 5.2

Michaelis constant: 1.1×10^{-3} M (ADP); 2.2×10^{-3} M (PEP)

Optimum pH: 7.5 Fig. 1

Optimum temperature: 65°C Fig. 3

pH Stability: 5.0~10.0 (37°C, 20hr) Fig. 2

Thermal stability: < 60°C (pH 8.5, 20min) Fig. 4

Inhibitors: Ca²⁺, Co²⁺, Cu²⁺, Fe³⁺, Mn²⁺, Ni²⁺, NEM, Proclin, SDS Effect

of various chemicals: Table 1

Table 1.

Effect of Various Chemicals on PK .

The enzyme dissolved in 50mM imidazole buffer, pH 7.5 (10U/ml) was incubated with each chemical at 37°C for 2hr.

Chemical	Concn. (mM)	Residual activity
None		100%
CaCl ₂	2	73%
CoCl ₂	2	55%
CuSO ₄	2	65%
FeCl ₃	2	12%
MgSO ₄	2	95%
MnSO ₄	2	77%
NiCl ₂	2	77%
ZnSO ₄	2	113%

Chemical	Concn (mM)	Residual activity
BME	2	103%
NEM	2	69%
EDTA	5	91%
NaN ₃	20	103%
Proclin	0.045%	73%
Na-cholate	0.10%	122%
SDS	0.05%	14%
Triton X-100	0.10%	125%
Tween 20	0.10%	105%

