Purine-Nucleoside Phosphorylase (PNP)

P774070

Reaction

$$\text{Inosine} + \text{Pi} \xrightarrow{\text{PNP}} \text{Hypoxanthine} + \alpha\text{-D-Ribose 1 - phosphate}$$

Storage Conditions

Store at -20℃ (24 months). Upon delivery aliquot. Avoid freeze/thaw cycle.Store in the dark. Desiccated.

Product description

Appearance: White amorphous powder, lyophilized
Source: Microorganism
Enzyme Commission Number: EC 2.4.2.1.
CAS Number: 9030-21-1
Specific activity: ≥ 110 U/mg protein
Unit definition: One unit of activity is defined as the production of 1 μmol of Hypoxanthine and Ribose 1-phosphate per minute at 37℃ at pH 7.7.

Properties

Molecular weight: 32 kDa (SDS-PAGE)
Isoelectric point: 6.0
Michaelis constant: 2.2×10^{-4} mol/L (Inosine)
Optimum pH: 7.7 { Fig.1 }
Optimum temperature: 60℃ { Fig.2 }
pH Stability: 6.5 ~ 8.5 (37℃, 1hr) { Fig.3 }
Thermal stability: ＜60℃ (pH 7.7, 30min) { Fig.4 }
Inhibitors: Co^{2+} ,Cu^{2+}, SDS
Effect of various chemicals: { Table 1 }

Table 1

Effect of Various Chemicals on PNP

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

Chemical	Concn.(mM)	Residual activity
None	-	100%
FeCl3	2.0	82%
CaCl2	2.0	100%

NiCl2	2.0	95%
MgSO4	2.0	103%
MnSO4	2.0	101%
ZnSO4	2.0	94%

Chemical	Concn.(mM)	Residual activity
CoCl2	2.0	85%
CuSO4	2.0	20%
BME	2.0	100%
EDTA	5.0	97%
Tween20	0.1%	110%
Triton-X100	0.1%	105%
SDS	0.05%	78%

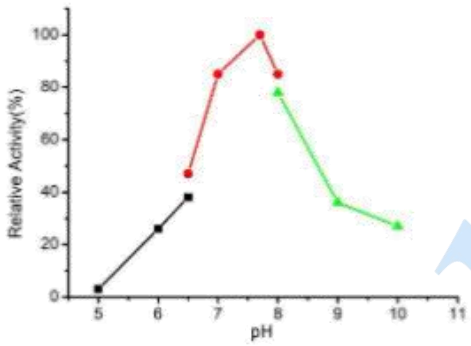

Fig.1 pH activity

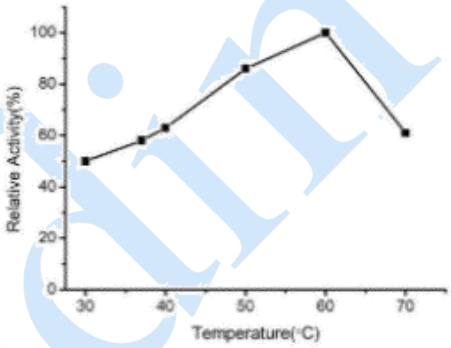

Fig.2 Temperature activity

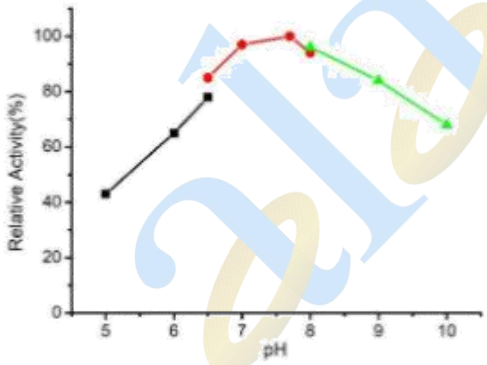

Fig.3 pH Stability

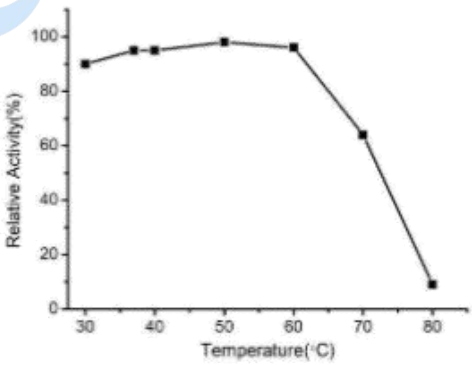

Fig.4 Thermal stability