

Native Microorganisms Nucleoside Phosphorylase

Cat. No. NATE-0606

Lot. No. (See product label)

Introduction

Description In enzymology, a purine-nucleoside phosphorylase (EC 2.4.2.1) is an enzyme that catalyzes the chemical reaction: purine nucleoside + phosphate \leftrightarrow purine + alpha-D-ribose 1-phosphate. Thus, the two substrates of this enzyme are purine nucleoside and phosphate, whereas its two products are purine and alpha-D-ribose 1-phosphate. This enzyme belongs to the family of glycosyltransferases, specifically the pentosyltransferases. This enzyme participates in 3 metabolic pathways: purine metabolism, pyrimidine metabolism, and nicotinate and nicotinamide metabolism.

Applications Nucleoside phosphorylase is used in coupled enzyme systems to measure protein dephosphorylation. This enzyme is useful for enzymatic determination of inorganic phosphorus, 5'-nucleotidase and adenosine deaminase when coupled with xanthine oxidase (XTO-212) and uricase (UAO-201, UAO-211). Purine nucleoside phosphorylase has shown the ability to perform both phosphorylosis and synthesis of purine deoxy- and ribonucleosides. It has also been found that membrane-associated nucleoside phosphorylases may have a transmembranal orientation with their base and ribose-1-P binding sites on opposite sides of the membrane.

Synonyms purine-nucleoside phosphorylase; inosine phosphorylase; PNP; PNPase; PUNPI; PUNPII; inosine-guanosine phosphorylase; nucleotide phosphatase; purine deoxynucleoside phosphorylase; purine deoxyribonucleoside phosphorylase; purine nucleoside phosphorylase; purine ribonucleoside phosphorylase; 9030-21-1; EC 2.4.2.1

Product Information

Source	Microorganisms
Form	Lyophilized powder containing potassium gluconate, mannitol and EDTA
EC Number	EC 2.4.2.1
CAS No.	9030-21-1
Molecular Weight	mol wt ~120 kDa
Activity	> 10 units/mg protein
Isoelectric point	4.1 +/- 0.1
pH Stability	pH 6.0-9.0 (30°C, 16hr)
Optimum pH	7.5-8.0
Thermal stability	below 60°C (pH 7.7, 30min)
Optimum temperature	65°C
Michaelis Constant	6.4 x 10 ⁻⁵ M (Inosine), 3.2x10 ⁻⁴ M (Pi)
Inhibitors	n-Chloromercuribenzoate, SDS, Hg ⁺⁺ , Ag ⁺

Inhibitors

p-Chloromercuribenzoate, SDS, Hg²⁺, Ag⁺

Unit

One unit will cause the phosphorolysis of 1.0 μ mole of inosine to hypoxanthine and ribose 1-phosphate per min at pH 7.4 at 25°C.

Definition***Storage and Shipping Information*****Storage**

−20°C