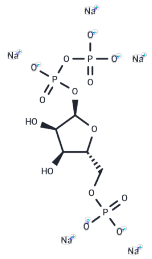
Data Sheet (Cat.No.T38472)

TargetMol

Phosphoribosyl pyrophosphate pentasodium

Chemical Properties



CAS No. : 108321-05-7

Formula: C5H8Na5O14P3

Molecular Weight: 499.98

Storage: Keep away from moisture,Store at low temperature
Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	Phosphoribosyl pyrophosphate pentasodium is the sodium salt form of PRPP. PRPP is a phosphoribosyl donor for AMP and GMP synthesis in reactions catalysed by adenine phosphoribosyltransferase and hypoxanthine/guanine phosphoribosyltransferase. PRPP is synthesized from ribose-5-phosphate and ATP by PRPP synthetase (EC 2.7.6.1).
Targets(IC50)	Endogenous Metabolite
In vitro	Phosphoribosyl diphosphate (PRPP) pentasodium serves as a crucial intermediate in cellular metabolism, synthesized via the action of PRPP synthase from ribose 5-phosphate and ATP, yielding PRPP and AMP. PRPP, ubiquitous in living organisms, participates in substitution reactions leading to glycosidic bond formation. It plays a pivotal role in the biosynthesis of purine and pyrimidine nucleotides, amino acids like histidine and tryptophan, cofactors such as NAD and tetrahydromethanopterin, arabinosyl monophosphodecaprenol, and some aminoglycoside antibiotics. Additionally, as a common substrate for adenine phosphoribosyltransferase and hypoxanthine-guanine phosphoribosyltransferase, PRPP pentasodium accumulates in human erythrocytes deficient in hypoxanthine-guanine phosphoribosyltransferase. The addition of 5-Phosphoribosyl-1-pyrophosphate to purified adenine phosphoribosyltransferase has been shown to enhance its stability against heat inactivation.

Solubility Information

Solubility	H2O: 40 mg/mL (80 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.0001 mL	10.0004 mL	20.0008 mL
5 mM	0.400 mL	2.0001 mL	4.0002 mL
10 mM	0.200 mL	1.000 mL	2.0001 mL
50 mM	0.040 mL	0.200 mL	0.400 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Schneiter R, et al. The importance of the five phosphoribosyl-pyrophosphate synthetase (Prs) gene products of Saccharomyces cerevisiae in the maintenance of cell integrity and the subcellular localization of Prs1p. Microbiology (Reading). 2000;146 Pt 12:3269-3278.
Greene ML, et al. Substrate stabilization: genetically controlled reciprocal relationship of two human enzymes. Science. 1970;167(3919):887-889.