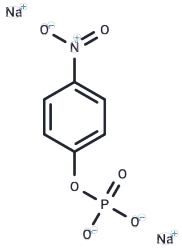
Data Sheet (Cat.No.T16554)

PNPP

Chemical Properties



CAS No. : 4264-83-9

Formula: C6H4NNa2O6P

Molecular Weight: 263.05

Storage: Store at low temperature,Keep away from direct sunlight
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	PNPP is a non-proteinaceous chromogenic substrate for alkaline and acid phosphatases used in ELISA and conventional spectrophotometric assays.
Targets(IC50)	Others
In vitro	Instructions I. Solution preparation 1. Stock solution preparation: Dissolve PNPP powder in an appropriate buffer, usually at a concentration of 5-10 mM. It is recommended to use a buffer containing 50 mM Tris-HCl and 10 mM $MgCl_2$, with the pH adjusted to 9.5 to suit the activity of alkaline phosphatase. 2. Working solution preparation: Dilute the stock solution to the required concentration, usually 2-5 mM, according to experimental needs. II. Operation steps 1. Reaction conditions: Temperature: 37°C. Time: 10-30 minutes, the specific time needs to be optimized according to the experiment. 2. Detection method: 1) Under the action of the enzyme, PNPP is hydrolyzed to produce yellow p-nitrophenol, which has a maximum absorption peak at 405 nm. 2) Use a spectrophotometer to measure the absorbance at 405 nm to evaluate the activity of the enzyme. Note: Fresh preparation: PNPP solution should be prepared before use and avoid long-term storage to prevent hydrolysis. Store away from light: PNPP is light-sensitive, so strong light exposure should be avoided during operation. Termination of reaction: In ELISA experiments, an equal volume of 0.1 M NaOH or 0.1 M EDTA can be added after the reaction is completed to terminate the reaction. The above information is based on published literature. Experimental procedures should be appropriately modified to meet specific research demands.

Solubility Information

Solubility	H2O: 255 mg/mL (969.4 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.8016 mL	19.0078 mL	38.0156 mL
5 mM	0.7603 mL	3.8016 mL	7.6031 mL
10 mM	0.3802 mL	1.9008 mL	3.8016 mL
50 mM	0.076 mL	0.3802 mL	0.7603 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

Qiu X,et al. An in-line method for high-throughput screening of protein tyrosine phosphatase receptor type O inhibitors by capillary electrophoresis based on electrophoretically mediated microanalysis. J Chromatogr A. 2024 Jan 4;1713:464511.

Chang CC,et al. Histone Deacetylase Inhibitors Downregulate Calcium Pyrophosphate Crystal Formation in Human Articular Chondrocytes. Int J Mol Sci. 2022 Feb 26;23(5):2604.

Zhang Y, et al. cGMP-dependent protein kinase II determines β-catenin accumulation that is essential for uterine decidualization in mice. Am J Physiol Cell Physiol. 2019 Dec 1;317(6):C1115-C1127.