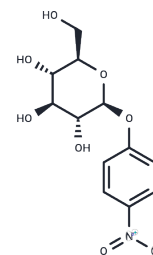


PNPG

Chemical Properties

CAS No. :	2492-87-7
Formula:	C ₁₂ H ₁₅ NO ₈
Molecular Weight:	301.25
Storage:	Keep away from direct sunlight Powder: -20°C for 3 years In solvent: -80°C for 1 year <small>Actual storage temperature shall be subject to the COA.</small>



Biological Description

Description	PNPG (4-Nitrophenyl β-D-glucopyranoside) is a chromogenic substrate for β-D-glucosidase that, upon enzymatic cleavage, yields a yellow solution.
Targets(IC50)	Others
Kinase Assay	<p>I. β-D-glucosidase activity assay</p> <p>1. Material preparation:</p> <ol style="list-style-type: none"> 1) PNP solution: Dissolve PNP in an appropriate amount of buffer, usually at a concentration of 1-5 mM. The solution is usually prepared using phosphate buffer (PBS, pH 7.0-7.5). 2) Enzyme solution: Purified β-D-glucosidase or cell extract, enzyme concentration adjusted according to experimental requirements. 3) Buffer: Usually use phosphate buffer (PBS, pH 7.0-7.5). <p>2. Experimental steps:</p> <ol style="list-style-type: none"> 1) Prepare PNP solution and add it to the reaction tube. 2) Add an appropriate amount of β-D-glucosidase solution (usually within the concentration range of the enzyme) and mix well. 3) Incubate the reaction system at 37°C for a certain time (usually 10-30 minutes). 4) After the reaction is completed, add a stop solution (such as NaOH solution) to stop the reaction. The yellow color change of the solution indicates that the reaction is complete. 5) Use a spectrophotometer to measure the absorbance value at 405 nm. The absorbance is proportional to the activity of the enzyme. <p>2. Application in enzyme inhibitor screening</p> <p>When adding different concentrations of potential inhibitors, measuring the change in enzyme activity can be used to screen inhibitors of β-D-glucosidase.</p> <p>The above information is based on published literature. Experimental procedures should be appropriately modified to meet specific research demands.</p>

Solubility Information

A DRUG SCREENING EXPERT

Solubility	DMSO: 242.5 mg/mL (804.98 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween-80+45% Saline: 2.5 mg/mL (8.3 mM),Sonication is recommended. <i>Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.</i>

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.3195 mL	16.5975 mL	33.195 mL
5 mM	0.6639 mL	3.3195 mL	6.639 mL
10 mM	0.332 mL	1.6598 mL	3.3195 mL
50 mM	0.0664 mL	0.332 mL	0.6639 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

- He J,et al. Characterization of a novel cold-adapted GH1 β -glucosidase from Psychrobacillus glaciei and its application in the hydrolysis of soybean isoflavone glycosides. Curr Res Food Sci. 2024 May 24;8:100777.
- Kobayashi H, Suzuki H. Kinetic studies of alpha-galactosidase-containing mold pellets on PNPG hydrolysis. Biotechnol Bioeng. 1976 Jan;18(1):37-51.
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