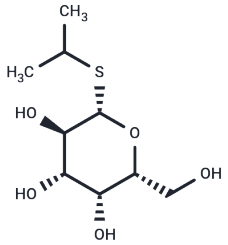
Data Sheet (Cat.No.T4336)

TargetMol

IPTG

Chemical Properties



CAS No. : 367-93-1

Formula: C9H18O5S

Molecular Weight: 238.3

Storage: Store under nitrogen
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	IPTG (Isopropyl β-D-thiogalactoside) is a synthetic, non-metabolizable galactose analog. IPTG can trigger the transcription process of the lactose operon, thereby inducing the expression of corresponding proteins encoded by downstream genes of the lactose operon.
Targets(IC50)	Others
In vitro	**Methods**: Add IPTG to E. coli carrying the PLtetO-1-luc reporter plasmid at a concentration gradient (0.01–5 mM). Culture until the logarithmic growth phase, then detect luciferase activity and calculate the fold change in expression levels. **Results**: Plac/ara-1 exhibits an IPTG-induced regulatory range of up to 1800-fold. [1]
Kinase Assay	For RNA interference (RNAi), A549 cells are plated at 1,500 cells per well in 96-well plates, allowed to adhere for 24 hours, and transfected with 25 nM siRNA oligonucleotide using Dharmafect 4. Transfected cells are treated with the indicated concentrations of GNE-617 (0.1, 1 , 10 , 100 , and 1000 nM) for 72 hours and viability is evaluated with CellTiter-Glo. Lysates for detection of NAPRT1 protein are collected 72 hours after transfection of 1 million A549 cells in 10 cm dishes. For NAPRT1 re-expression, RERF-LC-MS cells are transfected with pCMV6-AC.NAPRT1 and empty vector pCMV6-AC using Amaxa Nucleofector technology and selected with Geneticin

Solubility Information

Solubility	DMSO: 237 mg/mL (994.54 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: 5 mg/mL (20.98 mM),Sonication is recommended. *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.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	4.1964 mL	20.982 mL	41.9639 mL
5 mM	0.8393 mL	4.1964 mL	8.3928 mL
10 mM	0.4196 mL	2.0982 mL	4.1964 mL
50 mM	0.0839 mL	0.4196 mL	0.8393 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

Lutz R, Bujard H. Independent and tight regulation of transcriptional units in Escherichia coli via the LacR/O, the TetR/O and AraC/I1-I2 regulatory elements. Nucleic Acids Res. 1997 Mar 15;25(6):1203-10.
Mok MT ,et al. A two-step fluorescence-activated cell sorting approach to isolate genetically modified mammalian cells with isopropyl-beta-D-thiogalactoside (IPTG)-inducible gene expression. Cytometry A. 2012 Feb;81(2):101-4.
Murakami M,et al. A dual prokaryotic (E. coli) expression system (pdMAX). PLoS One. 2021 Oct 21;16(10):e0258553.