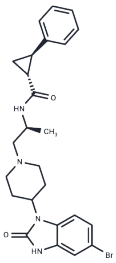
Data Sheet (Cat.No.T21777)

TargetMol

VU0359595

Chemical Properties



CAS No. : 1246303-14-9

Formula: C25H29BrN4O2

Molecular Weight: 497.43

Storage: 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	VU0359595 (ML-270) is a potent and selective pharmacological phospholipase D1 (PLD1) inhibitor with an IC50 of 3.7 nM. VU0359595 is >1700-fold selective for PLD1 over PLD2 (IC50 of 6.4 μM). VU0359595 can be used for the research of cancer, diabetes, neurodegenerative and inflammatory diseases.
Targets(IC50)	Antifungal,Phospholipase
In vitro	VU0359595, at concentrations ranging from 5 to 5000 nM, inhibits both the baseline and FCS/IGF-1 stimulated proliferation of astroglial cells. At doses of 5, 50, and 500 nM, with a 30-min exposure, it does not impact the basal phospholipase D (PLD) activity in astrocytes; however, it significantly reduces mitogen-stimulated PLD activity in a concentration-dependent manner[2]. Additionally, at a concentration of 0.15 μM administered 1 h before and during a 4 h high glucose treatment, VU0359595 notably decreases the high glucose-induced increase in [3H]-phosphatidylethanol (PEth) generation in retinal pigment epithelium (RPE) cells[3]. When applied at 5 μM one hour before lipopolysaccharide (LPS) treatment, it modulates autophagy in LPS-induced RPE cells undergoing a 24-h treatment with 10 μg/ml of LPS[4]. Furthermore, a 2 nM pre-exposure for 30 min effectively blocks the gliotoxin (50 ng/ml)-enhanced internalization of A. fumigatus in A549 cells[5].

Solubility Information

Solubility	DMSO: 4.98 mg/mL (10.01 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.0103 mL	10.0517 mL	20.1033 mL
5 mM	0.4021 mL	2.0103 mL	4.0207 mL
10 mM	0.201 mL	1.0052 mL	2.0103 mL
50 mM	0.0402 mL	0.201 mL	0.4021 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

Lewis JA, et al. Design and synthesis of isoform-selective phospholipase D (PLD) inhibitors. Part I: Impact of alternative halogenated privileged structures for PLD1 specificity. Bioorg Med Chem Lett. 2009;19(7):1916-1920.
Burkhardt U, et al. Phospholipase D is a target for inhibition of astroglial proliferation by ethanol. Neuropharmacology. 2014;79:1-9.
Tenconi PE, et al. High glucose-induced phospholipase D activity in retinal pigment epithelium cells: New insights into the molecular mechanisms of diabetic retinopathy. Exp Eye Res. 2019;184:243-257.
Bermúdez V, et al. Lipopolysaccharide-Induced Autophagy Mediates Retinal Pigment Epithelium Cells Survival. Modulation by the Phospholipase D Pathway. Front Cell Neurosci. 2019;13:154. Published 2019 Apr 24.
Jia X, et al. Gliotoxin promotes Aspergillus fumigatus internalization into type II human pneumocyte A549 cells by inducing host phospholipase D activation. Microbes Infect. 2014 Jun;16(6):491-501.