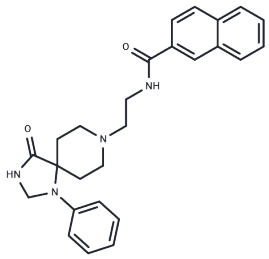
Data Sheet (Cat.No.T7280)

TargetMol

CAY10594

Chemical Properties



CAS No. : 1130067-34-3

Formula: C26H28N4O2

Molecular Weight: 428.53

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	CAY10594 is a potent phospholipase D2(PLD2) inhibitor. CAY10594 ameliorates acetaminophen-induced acute liver injury by regulating the phosphorylated-GSK-3β/JNK axis.
Targets(IC50)	Apoptosis,STAT,ALK,CXCR,Dehydrogenase,GRK,GSK-3,Interleukin,Phospholipase
In vivo	CAY10594 administration markedly blocked the acute liver injury in a dose-dependent manner, showing almost complete inhibition with 8?mg/kg of CAY10594. During the pathological progress of acute liver injury, GSH levels are decreased, and this is significantly recovered upon the administration of CAY10594 at 6?hours post APAP challenge. GSK-3β (Serine 9)/JNK phosphorylation is mainly involved in APAP-induced liver injury. CAY10594 administration strongly blocked GSK-3β (Serine 9)/JNK phosphorylation in the APAP-induced acute liver injury model. Consistently, sustained JNK activation in the cytosol and mitochondria from hepatocytes were also decreased in CAY10594-treated mice. Many types of immune cells are also implicated in APAP-induced liver injury. However, neutrophil and monocyte populations were not different between vehicle- and CAY10594-administered mice which are challenged with APAP. Therapeutic administration of CAY10594 also significantly attenuated liver damage caused by the APAP challenge, eliciting an enhanced survival rate[1].
Animal Research	Mice were fasted for 16?hours before APAP injection. APAP (500?mg/kg) was administered with oral gavage in mice. CAY10594 (N-[2-(4-oxo-1-phenyl-1,3,8-triazaspiro[4,5]dec-8-yl)ethyl]-2-naphthalene carboxamide)23 was dissolved in 1% DMSO and intraperitoneally administered to mice 30?minutes prior to APAP injection for examining protective effects or after 3?hours from APAP challenge for investigating therapeutic effects of CAY10594[1].

Solubility Information

Solubility	DMSO: 20 mg/mL (46.67 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: 1 mg/mL (2.33 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*

In vivo Formulation	*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	2.3336 mL	11.6678 mL	23.3356 mL
5 mM	0.4667 mL	2.3336 mL	4.6671 mL
10 mM	0.2334 mL	1.1668 mL	2.3336 mL
50 mM	0.0467 mL	0.2334 mL	0.4667 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

Lee SK, Bae GH, Kim YS,et al.A phospholipase D2 inhibitor, CAY10594, ameliorates acetaminophen-induced acute liver injury by regulating the phosphorylated-GSK-3β/JNK axis[J].Sci Rep. 2019 May 10;9(1):7242.
Zhang Y, Li Y, Liu P, et al. Phosphatase Shp2 regulates biogenesis of small extracellular vesicles by dephosphorylating Syntenin. Journal of extracellular vesicles. 2021 Mar;10(5):e12078. doi: 10.1002/jev2.12078. Epub 2021 Mar 10.
Pupovac A , Stokes L , Sluyter R . CAY10593 inhibits the human P2X7 receptor independently of phospholipase D1 stimulation[J]. Purinergic Signalling, 2013, 9(4):609-619.
Liu Z, Nan Y, Luo Q, et al. DLGAP1-AS2-Mediated Phosphatidic Acid Synthesis Activates YAP Signaling and Confers Chemoresistance in Squamous Cell Carcinoma. Cancer Research. 2022
Zhang Y, Li Y, Liu P, et al. Phosphatase Shp2 regulates biogenesis of small extracellular vesicles by dephosphorylating Syntenin[J]. Journal of extracellular vesicles. 2021, 10(5): e12078.