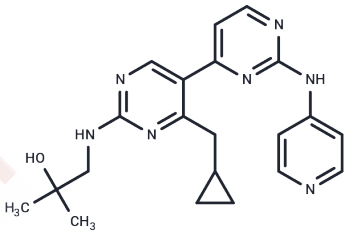
Data Sheet (Cat.No.T7944)

TargetMol

Vps34-IN-4

Chemical Properties



CAS No. : 1383716-46-8

Formula: C21H25N7O

Molecular Weight: 391.47

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	Vps34-IN-4 is a potent and selective inhibitor of VPS34 (IC50: 15 nM).
Targets(IC50)	Autophagy,PI3K
In vitro	VPS34 inhibitor 1 (Compound 19, PIK-III analogue) is extraordinarily selective over other lipid and protein kinases. The ability of compound 19 to prevent the degradation of autophagy substrates p62, NCOA4, NBR1, NDP52, and FTH1 is similar to PIK-III. In addition, treatment of cells with compound 19 leads to an increase in the lipidated and nonlipidated forms of LC3 similar to previous reports using PIK-III.
In vivo	The pharmacokinetic profile of analogue 19 is determined in C57BL/6 mice.?After oral administration at 10 mg/kg, the compound is rapidly absorbed and showed moderate mean systemic clearance (30 mL/min/kg, approximately 33% of hepatic blood flow), with good oral bioavailability (F% = 47).?Based on these PK parameters and the cellular activity, compound 19 constitutes a suitable candidate for in vivo studies.?Upon oral administration of compound 19 at 50 mg/kg twice a day (BID) for 7 days, LC3-II accumulates consistent with reduced autophagic capacity in time-dependent manner.?It inhibits autophagy in vivo.
Cell Research	Cell lines: U2OS cells.Concentrations: 0, 1, 5, 10 μM. Incubation Time: 24 h .Method: For inhibitor assay, cells are plated and the following day when cells had reached 90%, are treated with dimethyl sulfoxide (DMSO, vehicle) or the indicated concentration of PIK-III or Compound 19, both dissolved in DMSO. 24 hours later, cells are lysed in RIPA supplemented with 1% SDS and mini-EDTA protease inhibitors, homogenized by passage through a Qiashredder column and the protein is quantified by DC Lowry protein assay.
Animal Research	Animal Models: C57BL/6 Mice. Formulation: PG (20% v/v). Dosages: 10 mg/kg(p.o.) or 2 mg/kg(I.V.) .Administration: oral administration or I.V.

Solubility Information

Solubility	DMSO: 78 mg/mL (199.25 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.5545 mL	12.7724 mL	25.5447 mL
5 mM	0.5109 mL	2.5545 mL	5.1089 mL
10 mM	0.2554 mL	1.2772 mL	2.5545 mL
50 mM	0.0511 mL	0.2554 mL	0.5109 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

Honda A , Harrington E , Cornella-Taracido I , et al. Potent, Selective, and Orally Bioavailable Inhibitors of VPS34 Provide Chemical Tools to Modulate Autophagy in Vivo[J]. ACS Medicinal Chemistry Letters, 2015, 7(1).
Yi W, Zhang J, Huang Y, et al.Ferritin-mediated mitochondrial iron homeostasis is essential for the survival of hematopoietic stem cells and leukemic stem cells.Leukemia.2024: 1-16.