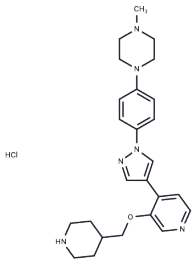
Data Sheet (Cat.No.T11996)

TargetMol

MELK-8a hydrochloride

Chemical Properties



CAS No. : 2096992-20-8

Formula: C25H33ClN6O

Molecular Weight: 469.02

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	MELK-8a hydrochloride is a potent inhibitor of maternal embryonic leucine zipper kinase (MELK, IC50 = 2 nM).
Targets(IC50)	MELK
In vitro	MELK-8a hydrochloride inhibits the growth of MDA-MB-468 cells and MCF-7 cells with an IC50 of approximately 0.06 and 1.2 μM, respectively. MELK-8a hydrochloride remains very potent with an IC50 of 140 nM when the ATP concentration in the biochemical assay is shifted from 20 μM to 2 mM. MELK-8a hydrochloride only inhibits seven off-target kinases in addition to MELK with >85% inhibition of binding at 1 μM demonstrating great selectivity. MELK-8a hydrochloride is at least 90-fold more selective in targeting MELK in all cases. MELK-8a hydrochloride is fairly soluble (0.22 g/L at pH 6.8) and shows a good permeability in the Caco-2 assay[1].
In vivo	In C57BL/6 mice, MELK-8a hydrochloride (30 mg/kg; s.c.) results in good plasma exposure. The compound adsorption into the systemic circulation is rapid (Tmax=0.4 h) and peak plasma concentration reaches 6.6 μM. An ascending dose PK study in female athymic nude mice shows that the rate of compound release is maximal at 120 mg/kg and all clearance mechanisms can be saturated at 240 mg/kg. However, MELK-8a hydrochloride (10 mg/kg; oral) shows very poor PK (3.6% oral bioavailability) consistent with very high in vivo clearance[1].

Solubility Information

Solubility	H2O: 100 mg/mL (213.21 mM),Sonication is recommended. DMSO: 8 mg/mL (17.06 mM),Sonication and heating are recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.1321 mL	10.6605 mL	21.3211 mL
5 mM	0.4264 mL	2.1321 mL	4.2642 mL
10 mM	0.2132 mL	1.0661 mL	2.1321 mL
50 mM	0.0426 mL	0.2132 mL	0.4264 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

Touré BB, et al. Toward the Validation of Maternal Embryonic Leucine Zipper Kinase: Discovery, Optimization of Highly Potent and Selective Inhibitors, and Preliminary Biology Insight. J Med Chem. 2016 May 26;59(10):4711-23.