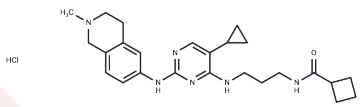
Data Sheet (Cat.No.T5356)

TargetMol

MRT68921 HCl

Chemical Properties



CAS No. : 2070014-87-6

Formula: C25H34N6O·HCl

Molecular Weight: 471.04

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	MRT68921 hydrochloride is a potent inhibitor of both ULK1 and ULK2 [IC50s: 2.9 and 1.1 nM, respectively].
Targets(IC50)	Apoptosis,Bcl-2 Family,Autophagy,GSK-3,ROS
In vitro	MRT68921 is the most potent inhibitor of both ULK1 and ULK2, with greater than a 15-fold reduction in the IC50 for ULK1 (2.9 nM) and greater than a 30-fold reduction for ULK2 (1.1 nM). MRT68921 (1 μM) was sufficient to reduce phospho-ATG13 to control levels, and in line with the in vitro IC50 values [1]. Pre-incubating the cells for 30 min with the ULK1 inhibitor MRT68921 at the optimal concentration of 100 nM prevented the forskolin-induced CYTO-ID staining. The same effect was observed with siRNA against ULK1 [2].
Kinase Assay	Initial ULK1 kinase assays were performed with GST-ULK1, produced in Sf9 cells. For other experiments, recombinant GST-ULK1 (wild type, kinase-dead (K46I), and M92T and M92Q) was expressed in 293T cells, purified, and eluted from a glutathione-Sepharose column. Kinase assays were carried out in 50 mM Tris-HCl, pH 7.4, 10 mM magnesium acetate, 0.1 mM EGTA, and 0.1% β-mercaptoethanol, containing 30 μM cold ATP, and 0.5 μCi of [γ-32P]ATP for 5 min at 25 °C. Prior to ATP addition, reaction mixes were prewarmed to 25 °C for 5 min. Reactions were stopped by the addition of sample buffer, followed by SDS-PAGE, transfer to nitrocellulose, and analysis by autoradiography and immunoblot. For IC50 curve measurements, kinase assays were performed, using myelin basic protein as a substrate [1].
Cell Research	Immortalized wild-type mouse embryonic fibroblasts (MEFs) have been described previously. MEFs and 293T cells were grown in DMEM, supplemented with 10% fetal bovine serum and penicillin/streptomycin, and cultured at 37 °C, 5% CO2. For induction of autophagy, cells were typically grown to 75% confluency, washed twice, and incubated in Earle's balanced salt solution (EBSS) for 1 h (or complete medium as a control) unless indicated. MRT67307 (10 μM), MRT68921 (1 μM), AZD8055 (1 μM), or bafilomycin A1 (50 nM) was included where indicated. Transfection and transduction were as described [1].

Solubility Information

Solubility	DMSO: 4.72 mg/mL (10.02 mM),Sonication is recommended. H2O: 10 mg/mL (21.23 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.123 mL	10.6148 mL	21.2296 mL
5 mM	0.4246 mL	2.123 mL	4.2459 mL
10 mM	0.2123 mL	1.0615 mL	2.123 mL
50 mM	0.0425 mL	0.2123 mL	0.4246 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

Petherick KJ, et al. Pharmacological inhibition of ULK1 kinase blocks mammalian target of rapamycin (mTOR)-dependent autophagy. J Biol Chem. 2015 May 1;290(18):11376-83.
Skah S, et al. cAMP-mediated autophagy inhibits DNA damage-induced death of leukemia cells independent of p53. Oncotarget. 2018 Jul 13;9(54):30434-30449.