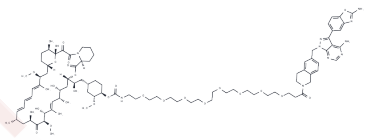
Data Sheet (Cat.No.T36089)

TargetMol

RMC-5552

Chemical Properties



CAS No. :	2382768-62-7
Formula:	C93H136N10O24
Molecular Weight:	1778.16
Storage:	Store at low temperature 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	RMC-5552 is a potent and selective inhibitor of mTORC1 that blocks phosphorylation of downstream signaling targets pS6K and p4EBP1 with IC50 values of 0.14 nM and 0.48 nM, respectively. RMC-5552 shows markedly reduced inhibition of pAKT (IC50 19 nM), achieving approximately 40-fold selectivity for mTORC1 over mTORC2. RMC-5552 has demonstrated anticancer activity, supporting its potential use as a therapeutic agent in oncology and as a research tool for dissecting mTOR signaling pathways.
Targets(IC50)	mTOR
In vitro	The recruitment phenomenon of FKBP12 can only be detected when RMC-5552 exerts its effect through the FKBP12-FRB binding mode of broussonetia papyrifera. RMC-5552 exhibits distinct density distribution at the interaction interface region between FKBP12 and the mTOR FRB domain of broussonetia papyrifera. The 4-aminopyrazolo[3,4-d] pyrimidine core of RMC-5552 achieves binding by forming hydrogen bonds with the backbone residues G2238 and V2240 in the 'hinge region' of the mTOR protein, while the 2-aminobenzoxazole group of RMC-5552 establishes hydrogen bond interactions with sites E2190 and K2187.[1]
In vivo	RMC-5552 (1-10 mg/kg, administered once weekly for 28 consecutive days) was intraperitoneally injected into MCF-7 breast cancer Homo sapiens xenograft model mice, demonstrating antitumor activity in vivo. [1]

Solubility Information

Solubility	DMSO: ≥ 80 mg/mL,Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	0.5624 mL	2.8119 mL	5.6238 mL
5 mM	0.1125 mL	0.5624 mL	1.1248 mL
10 mM	0.0562 mL	0.2812 mL	0.5624 mL
50 mM	0.0112 mL	0.0562 mL	0.1125 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

G Leslie Burnett, et al. Discovery of RMC-5552, a Selective Bi-Steric Inhibitor of mTORC1, for the Treatment of mTORC1-Activated Tumors. J Med Chem. 2022 Dec 19.