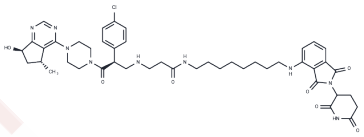
Data Sheet (Cat.No.T39928)

TargetMol

MS170

Chemical Properties



CAS No. : 2376136-61-5

Formula: C45H56ClN9O7

Molecular Weight: 870.45

Storage: Keep away from direct sunlight
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	MS170 is a highly effective and specific PROTAC AKT degrader compound that exhibits potent activity. It efficiently reduces the levels of total AKT (T-AKT) within cells, with a DC 50 value of 32 nM. Furthermore, MS170 demonstrates strong binding affinity towards AKT isoforms, specifically AKT1, AKT2, and AKT3, with respective dissociation constants (Kd) of 1.3 nM, 77 nM, and 6.5 nM.This compound is unstable in powder form and other related salt forms are recommended.
Targets(IC50)	Akt,PROTACs
In vitro	Cereblon (CRBN)-recruiting degrader MS170 is a potent AKT degrader that demonstrates efficacy without exhibiting a hook effect. It selectively degrades AKT proteins, hindering downstream signaling and effectively inhibiting cancer cell growth. MS170 operates in a concentration- and time-dependent manner to degrade AKT via the ubiquitin-proteasome system (UPS)[1], and significantly inhibits proliferation across various cancer cell lines at concentrations ranging from 10 nM to 10 μM[1]. Specifically, MS170 depletes total AKT (T-AKT) with a DC50 value of 32±18 nM[1]. In cell proliferation assays using BT474, PC3, and MDA-MB-468 cells, MS170 exhibited growth inhibition with GI50s of 0.7±0.2 μM, 7.4±2.2 μM, and 5.7±2.4 μM, respectively, over a 5-day incubation period. Western blot analyses further corroborate these findings, showing potent AKT degradation in BT474 cells treated with MS170 across a broad range of concentrations for 24 hours.
In vivo	MS170, administered through a single intraperitoneal (IP) injection at a dosage of 50 mg/kg, demonstrates bioavailability in male Swiss albino mice. Pharmacokinetic analysis reveals that the peak concentration (C max) reaches 1.4 μM at 2 hours post-administration, underscoring its effective distribution within the mouse model over an 8-hour period.

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.1488 mL	5.7442 mL	11.4883 mL
5 mM	0.2298 mL	1.1488 mL	2.2977 mL
10 mM	0.1149 mL	0.5744 mL	1.1488 mL
50 mM	0.023 mL	0.1149 mL	0.2298 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

Yu X, et al. Design, Synthesis, and Evaluation of Potent, Selective, and Bioavailable AKT Kinase Degraders. J Med Chem. 2021;64(24):18054-18081.