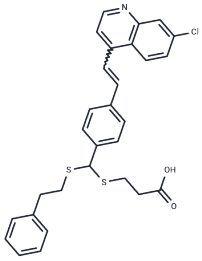
Data Sheet (Cat.No.T11896)

TargetMol
YOUR TARGET MOLECULES

LV-320

Chemical Properties



CAS No. : 2449093-46-1

Formula: C29H26ClNO2S2

Molecular Weight: 520.11

Appearance: no data available

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year

Biological Description

Description	LV-320 is a potent and uncompetitive ATG4B inhibitor with an IC 50 of 24.5 μM and a K d of 16 μM. LV-320 inhibits ATG4B enzymatic activity, blocks autophagic flux in cells, and is stable, non-toxic and active in vivo. These findings suggest that LV-320 will serve as a relevant chemical tool to study the various roles of ATG4B in cancer and other contexts [1].
Targets(IC50)	Cysteine Protease
In vitro	LV-320 (0-120 μM; SKBR3, MCF7, JIMT1, and MDA-MB-231 cells) treatment leads to a dose-dependent increase in endogenous LC3B-II and protein p62 levels in all four cell lines [1]. LV-320 (120 μM; 48 hours; MDA-MB-231 cells) treatment results in an increase in LC3B-II, indicating that LV-320 blocks autophagic flux [1]. Western Blot Analysis [1] Cell Line: SKBR3, MCF7, JIMT1, and MDA-MB-231 cells Concentration: 0 μM, 25 μM, 50 μM, 75 μM, 100 μM, or 120 μM Incubation Time: Result: Resulted in a dose-dependent increase in endogenous LC3B-II and protein p62 levels in all four cell lines. Cell Autophagy Assay [1] Cell Line: MDA-MB-231 cells Concentration: 120 μM Incubation Time: 48 hours Result: Blocked autophagic flux.
In vivo	Administering LV-320 (100-200 mg/kg; oral gavage; three times over two days; GFP-LC3 mice) resulted in terminal blood and liver concentrations of 169 μM and 104 μM, respectively. This treatment significantly increased the accumulation of GFP-LC3 puncta and elevated LC3B-II protein levels in treated animals compared to controls, without causing notable toxicity at either dose [1]. The study utilized female GFP-LC3 mice aged 9-14 weeks [1], exploring the pharmacokinetics and the biological impact of LV-320 on autophagy-related markers.

Solubility Information

Solubility	DMSO: 135 mg/mL (259.56 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.9227 mL	9.6134 mL	19.2267 mL
5 mM	0.3845 mL	1.9227 mL	3.8453 mL
10 mM	0.1923 mL	0.9613 mL	1.9227 mL
50 mM	0.0385 mL	0.1923 mL	0.3845 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.

Reference

Bosc D, et al. A new quinoline-based chemical probe inhibits the autophagy-related cysteine protease ATG4B. Sci Rep. 2018 Aug 3;8(1):11653. doi: 10.1038/s41598-018-29900-x.