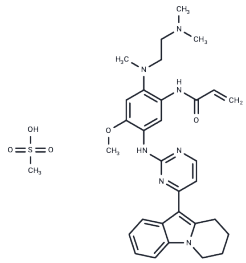
Data Sheet (Cat.No.T39670)

TargetMol

Oritinib mesylate

Chemical Properties



CAS No. : 2180164-79-6

Formula: C32H41N7O5S

Molecular Weight: 635.78

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	Oritinib mesylate (SH-1028) is a highly selective, orally active, pyrimidine-based irreversible inhibitor of epidermal growth factor receptor (EGFR) with a low IC50 of 18 nM. It is effective against both EGFR-sensitive and resistant (T790M) mutations and suppresses the proliferation of tumor cells harboring EGFR mutations, irrespective of their sensitivity or resistance.
Targets(IC50)	EGFR,Others
In vitro	Oritinib (SH-1028) mesylate, after 72 hours of treatment at concentrations of 10 μmol/L and subsequent 3-fold dilutions administered nine times, selectively targets EGFR-mutant NCI-H1975, H3255, and PC-9 cell lines, demonstrating IC50 values of 3.93, 9.39, and 7.63 nM, respectively. This indicates a significantly heightened sensitivity compared to its effect on wild-type EGFR in A431 cells, where it exhibited an IC50 of 778.89 nM. The findings underscore Oritinib's potential for preferentially inhibiting EGFR mutations in specific lung cancer cell lines, with effectiveness considerably more pronounced than on cells expressing the wild-type EGFR.
In vivo	Administered orally once daily for 14 consecutive days at dosages ranging from 2.5 to 15 mg/kg, Oritinib (SH-1028) mesylate selectively inhibits tumor progression in EGFR-mutant models but not in wild-type EGFR in vivo. Specifically, Oritinib at 5 mg/kg/day leads to only moderate tumor growth inhibition in A431 tumor xenografts (wild-type EGFR), whereas it induces significant and sustained tumor shrinkage in NCI-H1975 and PC-9 xenograft models harboring EGFR mutations. The compound demonstrates favorable bioavailability, extensive distribution from plasma to tissues, with peak concentrations at 1.5-2 hours, and increasing area under the concentration-time curve (AUC) values from Day 1 to Day 14 in plasma. In an animal model using Nu/Nu female nude mice bearing human lung cancer cell lines, Oritinib evidenced differential efficacy, underlining its potential for targeting EGFR-mutant tumors, as compared to the control group treated with osimertinib (5 mg/kg).

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.5729 mL	7.8644 mL	15.7287 mL
5 mM	0.3146 mL	1.5729 mL	3.1457 mL
10 mM	0.1573 mL	0.7864 mL	1.5729 mL
50 mM	0.0315 mL	0.1573 mL	0.3146 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

Han L, et al. SH-1028, An Irreversible Third-Generation EGFR TKI, Overcomes T790M-Mediated Resistance in Non-Small Cell Lung Cancer. Front Pharmacol. 2021;12:665253.