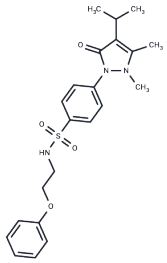
Data Sheet (Cat.No.T9533)

TargetMol

BC-LI-0186

Chemical Properties



CAS No. : 695207-56-8

Formula: C22H27N3O4S

Molecular Weight: 429.53

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	BC-LI-0186 (4-(2,3-dimethyl-5-oxo-4-propan-2-ylpyrazol-1-yl)-N-(2-phenoxyethyl) benzenesulfonamide) is a potent and selective inhibitor of the interaction of Leucyl-tRNA synthetase (LRS) and Ras-related GTP-binding protein D (RagD) with IC50 of 46.11 nM. BC-LI-0186 competitively binds the RagD interaction site of LRS with Kd of 42.1 nM and has no effect on LRS-vps34, LRS-eprs, RagB-RagD association, mTORC1 complex formation. BC-LI-0186 potently inhibits the activity of tumor-associated MTOR mutants and the growth of rapamycin-resistant cancer cells. BC-LI-0186 can be used for lung cancer-related research.
Targets(IC50)	Others
In vitro	Administration of 0-20 μM BC-LI-0186 followed by starved for 90?min in the leucine-free medium and then in the serum-free media for 15?min inhibits phosphorylation of S6K dose- and time-dependently, but it has no effects on phosphorylation of AKT (S473)[1]. Administration of 0-20 μM BC-LI-0186 for 6 hours induces cleaved poly ADP-ribose polymerase (PARP) and caspase-3 and an increase of p62 in A549 and H460 cells[1]. In NSCLC cells, BC-LI-0186 exhibits cytotoxic effect at nanomolar concentration, it exhibits IC50 values of 98 nM, 206 nM, 55 nM, 78 nM, 83 nM, 86 nM, 102 nM, 109 nM, 128 nM, and 206 nM in A549, H460, H2228, H1703, SNU1330, H1650, H2009, H358, H2279, H460, and H596 cells, respectively[1].BC-LI-0186 overcomes acquired rapamycin resistance and inhibits the mTORC1 pathway in isogenic HCT116 cell lines that harbored either M TOR WT (HCT116 MW) or S2035I mutations (HCT116 MM), it exhibits little changed efficacy between the wild-type and mutant cells (GI50:39.49 ?nM and 42.03?nM, EC50:105.03 nM and 100.45 ?nM)[1].
In vivo	Intraperitoneal injection of 50?mg/kg BC-LI-0186 alone or combines with cisplatin alone for 2 weeks(bid for 5?days per week) exhibits antitumor effects and significantly reduces tumor size compared with treatment with vehicle in an LSL K-ras G12D lung cancer animal model[1].

Solubility Information

Solubility	DMSO: 100 mg/mL (232.81 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 4 mg/mL (9.31 mM),Sonication is recommended. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.3281 mL	11.6406 mL	23.2813 mL
5 mM	0.4656 mL	2.3281 mL	4.6563 mL
10 mM	0.2328 mL	1.1641 mL	2.3281 mL
50 mM	0.0466 mL	0.2328 mL	0.4656 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

Jong Hyun Kim, et al. Control of leucine-dependent mTORC1 pathway through chemical intervention of leucyl-tRNA synthetase and RagD interaction. Nat Commun. 2017 Sep 29;8(1):732.

Choi H, Son JB, Kang J, Kwon J, Kim JH, Jung M, Kim SK, Kim S, Mun JY. Leucine-induced localization of Leucyl-tRNA synthetase in lysosome membrane. Biochem Biophys Res Commun. 2017 Nov 18;493(2):1129-1135.

Lee M, Kim JH, Yoon I, Lee C, Fallahi Sichani M, Kang JS, Kang J, Guo M, Lee KY, Han G, Kim S, Han JM. Coordination of the leucine-sensing Rag GTPase cycle by leucyl-tRNA synthetase in the mTORC1 signaling pathway. Proc Natl Acad Sci U S A. 2018 Jun 5;115(23):E5279-E5288.