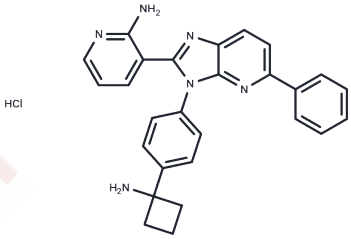
Data Sheet (Cat.No.T22247)

TargetMol

Miransertib hydrochloride

Chemical Properties



CAS No. :	1313883-00-9
Formula:	C27H25ClN6
Molecular Weight:	468.98
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	Miransertib hydrochloride (ARQ-092 hydrochloride) is a potent, orally bioavailable, selective, and allosteric inhibitor of Akt with an IC50 of 2.7 nM, 14 nM, and 8.1 nM against Akt1, Akt2, and Akt3, respectively. It also shows significant potency against the AKT1-E17K mutant protein and holds promise for research on PI3K/AKT-driven tumors and Proteus syndrome. Additionally, Miransertib hydrochloride exhibits efficacy against Leishmania [1, 2].
Targets(IC50)	Akt,Parasite
In vitro	In a comprehensive study involving various tumor-derived cell lines, Miransertib (ARQ-092; Compound 21a) demonstrated significant anti-proliferative effects in cell lines harboring mutations in PIK3CA/PIK3R1 compared to those with the wild-type (wt) PIK3CA/PIK3R1 or PTEN deficiency. Additionally, Miransertib effectively inhibited p-Akt (S473) and p-Akt (T308) in AN3CA and A2780 cells and suppressed p-PRAS40 (T246) with an IC 50 of 0.31 μM. Notably, Miransertib was highly effective against intracellular amastigotes of L. donovani or L. amazonensis in infected macrophages and promoted mTOR-dependent autophagy in Leishmania-infected macrophages, highlighting its diverse therapeutic potential.
In vivo	Miransertib (ARQ-092; Compound 21a) demonstrates effective oral bioavailability in rats (62%, 5 mg/kg) and monkeys (49%, 10 mg/kg), with half-lives of 17 hours and 7 hours, respectively. Peak plasma concentrations are 198 ng/mL in rats and 258 ng/mL in monkeys, with AUC values of 5496 h·ng/mL and 2960 h·ng/mL, respectively. Additionally, Miransertib effectively inhibits tumor growth in a human xenograft mouse model of endometrial adenocarcinoma [1].

Solubility Information

Solubility	DMSO: 40 mg/mL (85.29 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+90% Saline: 2 mg/mL (4.26 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*

In vivo Formulation	*vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.1323 mL	10.6614 mL	21.3229 mL
5 mM	0.4265 mL	2.1323 mL	4.2646 mL
10 mM	0.2132 mL	1.0661 mL	2.1323 mL
50 mM	0.0426 mL	0.2132 mL	0.4265 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

Nandan D, et al. Miransertib (ARQ 092), an orally-available, selective Akt inhibitor is effective against Leishmania. PLoS One. 2018 Nov 6;13(11):e0206920.

Wu XJ, et al. Kaposi's sarcoma-associated herpesvirus viral protein kinase augments cell survival. Cell Death Dis. 2023 Oct 18;14(10):688.