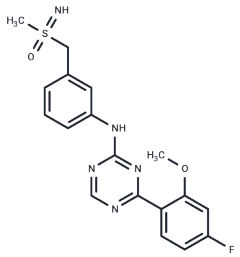
Data Sheet (Cat.No.T10464L)

TargetMol

Atuveciclib

Chemical Properties



CAS No. : 1414943-88-6

Formula: C18H18FN5O2S

Molecular Weight: 387.43

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	Atuveciclib (BAY 1143572) is a potent and highly selective PTEFb/CDK9 inhibitor with an IC50 value of 13 nm for CDK9/CycT1 and a selectivity ratio of 100 for CDK2, with highly bioavailable and orally available advantages.
Targets(IC50)	CDK
In vitro	Atuveciclib (BAY-1143572) exhibits a potent and highly selective inhibitory effect on PTEFb-kinase, specifically against PTEFb/CDK9, in the low nanomolar range, demonstrating at least 50-fold higher selectivity over other CDKs. The compound effectively inhibits the proliferation of seven AML cell lines, both with and without MLL rearrangements, evidenced by a median IC50 of 385 nM (ranging between 230-1100 nM), and it also triggers apoptosis[1]. Furthermore, Atuveciclib (BAY-1143572) differentiates itself by showing significant selectivity against a broad array of non-CDK kinases, coupled with wide-ranging antiproliferative effects across various tumor cell lines indicated by sub-micromolar IC50 values. Notably, it leads to the concentration-dependent inhibition of RNA polymerase II phosphorylation, subsequently diminishing MYC mRNA and protein levels[2].
In vivo	Atuveciclib (BAY-1143572) significantly enhances its effectiveness when used with various chemotherapeutics across different solid tumor models. Additionally, it reduces MYC mRNA levels in the blood cells of treated rats, suggesting the potential of using MYC as a pharmacodynamic marker during clinical trials. When administered orally once daily, Atuveciclib demonstrates efficacy as a single agent, achieving partial or complete remission in most AML (acute myeloid leukemia) xenograft models in both mice and rats, proving its potency and tolerability at certain doses.

Solubility Information

Solubility	DMSO: 100 mg/mL (258.11 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 (10.32 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	2.5811 mL	12.9056 mL	25.8111 mL
5 mM	0.5162 mL	2.5811 mL	5.1622 mL
10 mM	0.2581 mL	1.2906 mL	2.5811 mL
50 mM	0.0516 mL	0.2581 mL	0.5162 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

Scholz A, et al. BAY 1143572, a first-in-class, highly selective, potent and orally available inhibitor of PTEFb/CDK9 currently in Phase I, shows convincing anti-tumor activity in preclinical models of acute myeloid leukemia (AML). [abstract]. In: Proceedings of the 107th Annual Meeting of the American Association for Cancer Research; 2016 Apr 16-20; New Orleans, LA. Philadelphia (PA): AACR; Cancer Res 2016;76(14 Suppl):Abstract nr 3022.

Scholz A, et al. BAY 1143572: A first-in-class, highly selective, potent and orally available inhibitor of PTEFb/CDK9 currently in Phase I, inhibits MYC and shows convincing anti-tumor activity in multiple xenograft models by the induction of apoptosis. [abstract]. In: Proceedings of the 106th Annual Meeting of the American Association for Cancer Research; 2015 Apr 18-22; Philadelphia, PA. Philadelphia (PA): AACR; Cancer Res 2015;75(15 Suppl): Abstract nr DDT02-02. doi:10.1158/1538-7445.AM2015-DDT02-02