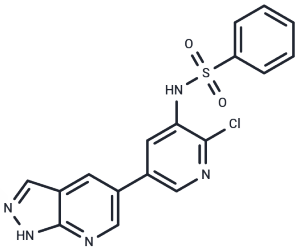
Data Sheet (Cat.No.T35531)

TargetMol

FD223

Chemical Properties



CAS No. : 2050524-24-6

Formula: C17H12ClN5O2S

Molecular Weight: 385.83

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	FD223 is a potent, selective phosphoinositide 3-kinase delta (PI3Kδ) inhibitor with a marked affinity (IC50=1 nM), demonstrating notable selectivity against other isoforms (IC50s: α=51 nM, β=29 nM, γ=37 nM). This compound effectively suppresses the proliferation of acute myeloid leukemia (AML) cell lines by inhibiting p-AKT Ser473, thereby inducing G1 phase cell cycle arrest. FD223 holds promise for leukemia research, particularly in AML[1].
Targets(IC50)	Apoptosis,Others,PI3K
In vitro	FD223 exhibits significant anti-proliferative activities in p110δ-positive AML cell lines HL-60, MOLM-16, EOL-1, and KG-1, with IC50 values of 2.25 μM, 0.87 μM, 2.82 μM, and 5.82 μM, respectively, while showing weak activity against the p110δ-negative MM.1R cell line (IC50: 23.13 μM)[1]. In MOLM-16 cells (0.1-5 μM; 16 hours), FD223 dose-dependently reduces Akt (Ser473) phosphorylation, akin to Idelalisib, indicating PI3K/Akt pathway inhibition[1]. FD223 also arrests the cell cycle at the G1 phase (1-5 μM; 24 hours) and induces cellular apoptosis in a dose-dependent manner (1-5 μM; 48 hours)[1].
In vivo	FD223 (20 and 40 mg/kg; p.o, per day for 14 consecutive days) demonstrates potent antitumor efficacy in the MOLM-16 xenograft model, achieving a 49% tumor volume reduction at a dose of 40 mg/kg/day (po), and exhibits no significant toxicity in the preliminary safety assessment. FD223 (i.v.; dose of 2 mg/kg; p.o.; 10 mg/kg rats) shows a moderate plasma clearance rate after intravenous administration (C = 0.191 L·h^-1·kg^-1). When administered orally, it presents a half-life (t1/2) of 3.74 hours, a Cmax of 1104 ng/mL, good oral plasma exposures (AUC0-∞ > 9000 h·ng/mL), and acceptable oral bioavailability (17.6%).

Solubility Information

Solubility	DMSO: 100 mg/mL (259.18 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: 3.3 mg/mL (8.55 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	2.5918 mL	12.9591 mL	25.9182 mL
5 mM	0.5184 mL	2.5918 mL	5.1836 mL
10 mM	0.2592 mL	1.2959 mL	2.5918 mL
50 mM	0.0518 mL	0.2592 mL	0.5184 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

Yang C, et al. Bioisosteric replacements of the indole moiety for the development of a potent and selective PI3Kδ inhibitor: Design, synthesis and biological evaluation [published online ahead of print, 2021 Jun 21]. Eur J Med Chem. 2021;223:113661.