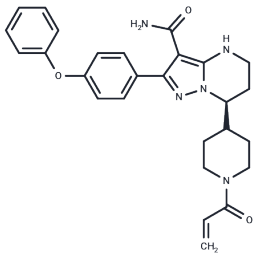
Data Sheet (Cat.No.T7584)

TargetMol

Zanubrutinib

Chemical Properties



CAS No. : 1691249-45-2

Formula: C27H29N5O3

Molecular Weight: 471.55

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	Zanubrutinib is an oral, irreversible, highly selective Bruton's tyrosine kinase (BTK) inhibitor (IC_{50} = 0.3 nM). This agent is used in research on tumors such as lymphoma and leukemia.
Targets(IC50)	BTK
In vitro	**Methods**: Human liver microsomes were incubated with 1 μM zanubrutinib, CYP subtype-specific inhibitors, and NADPH for 30 minutes. CYP enzyme phenotypes were analyzed using chemically-inhibited assays. **Results**: Ketoconazole (a CYP3A inhibitor) significantly inhibited zanubrutinib metabolism, indicating CYP3A as the primary metabolic enzyme. [1] **Methods**: Lymphoma cell lines Raji, EHEB, JEKO-1, and CD19 CAR-T cells (derived from 7 lymphoma patients) were treated with a concentration gradient of Zanubrutinib (0, 1, 15 μM) for 24 and 48 hours. Cell proliferation inhibition was assessed using the CCK-8 assay. **Results**: Zanubrutinib exhibited dose-dependent inhibition of proliferation in both lymphoma cells and CAR-T cells. At the low concentration of 1 μM, CAR-T cell inhibition was minimal. [2]
In vivo	**Methods**: Raji cells expressing luciferase were subcutaneously implanted into BALB/c nude mice. Following tumor formation, patients received oral gavage of Zanubrutinib (2.5 mg/kg) twice daily. **Results**: Zanubrutinib effectively inhibited tumor growth. [2] **Methods**: Eighteen male Sprague-Dawley rats were randomly divided into three groups and administered via gavage with 0.5% sodium carboxymethylcellulose solvent (control group), fluconazole (20 mg/kg), or itraconazole (20 mg/kg). Thirty minutes later, all rats received oral administration of Zanubrutinib (30 mg/kg). **Results**: Co-administration of the CYP3A4 inhibitors fluconazole and itraconazole significantly increased both the exposure (AUC) and peak concentration (Cmax) of Zanubrutinib. [3]

Solubility Information

Solubility	DMSO: 257.5 mg/mL (546.07 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: 5 mg/mL (10.6 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	2.1207 mL	10.6033 mL	21.2067 mL
5 mM	0.4241 mL	2.1207 mL	4.2413 mL
10 mM	0.2121 mL	1.0603 mL	2.1207 mL
50 mM	0.0424 mL	0.2121 mL	0.4241 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

Zhang H, Ou YC, Su D, Wang F, Wang L, Sahasranaman S, Tang Z. In vitro investigations into the roles of CYP450 enzymes and drug transporters in the drug interactions of zanubrutinib, a covalent Bruton's tyrosine kinase inhibitor. Pharmacol Res Perspect. 2021 Dec;9(6):e00870.

Ye X, Liu M, Lv C, Li Y, Chen L, Zhang J, Mu J, Deng Q. Synergistic Effects of Zanubrutinib Combined With CD19 CAR-T Cells in Raji Cells in Vitro and in Vivo. Technol Cancer Res Treat. 2022 Jan-Dec;21:15330338221133224.

Tang PF, Bao SS, Xiao ZX, Xie WF, Wu XM, Ge HL, Shao CF. A novel UHPLCMS/MS method for quantitative analysis of zanubrutinib in rat plasma: application to an in vivo interaction study between zanubrutinib and triazole antifungal. BMC Chem. 2023 Aug 30;17(1):107.