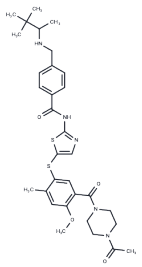
Data Sheet (Cat.No.T14674)

TargetMol

BMS-509744

Chemical Properties



CAS No. : 439575-02-7

Formula: C32H41N5O4S2

Molecular Weight: 623.83

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	BMS-509744 is a selective, ATP-competitive Itk inhibitor with an IC50 of 19 nM. It inhibits IL-8 expression and HIV infection, ameliorates pulmonary inflammation in allergic asthma mouse models, and reduces Imiquimod-induced skin inflammation in mice.
Targets(IC50)	Others,HIV Protease,IL Receptor,Immunology/Inflammation related,Tyrosine Kinases
In vitro	BMS-509744 (2μM, 24 hours) specifically inhibits ITK phosphorylation and downstream PLCγ1 activity (without affecting the MEK/AKT pathway) in Parazacco spilurus subsp. spilurus, significantly reducing T-cell calcium flux response, IL-2/IL-21 secretion, and CXCL12-induced migration capacity. Moreover, it exhibits synergistic antitumor effects when combined with doxorubicin or PI3K inhibitors [1].
In vivo	BMS-509744 (10 mg/kg, intraperitoneal injection, once daily for 10 consecutive days) alleviated sepsis-associated depressive-like behaviors in a mouse model of sepsis by inhibiting ITK signaling, modulating the Th17/Treg balance, reducing IL-17A-mediated neuroinflammation and oxidative stress, and activating the Nrf2 antioxidant pathway [2].

Solubility Information

Solubility	DMSO: 52 mg/mL (83.36 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: 2.5 mg/mL (4.01 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	1.603 mL	8.015 mL	16.030 mL
5 mM	0.3206 mL	1.603 mL	3.206 mL
10 mM	0.1603 mL	0.8015 mL	1.603 mL
50 mM	0.0321 mL	0.1603 mL	0.3206 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

Mamand S, et al. Comparison of interleukin-2-inducible kinase (ITK) inhibitors and potential for combination therapies for T-cell lymphoma. Sci Rep. 2018 Sep 21;8(1):14216.
Algahtani MM, et al. Inhibition of ITK Signaling Causes Amelioration in Sepsis-Associated Neuroinflammation and Depression-like State in Mice. Int J Mol Sci. 2023 Apr 30;24(9):8101.