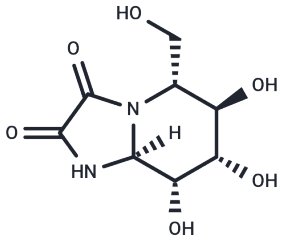
Data Sheet (Cat.No.T20628)

TargetMol

Kifunensine

Chemical Properties



CAS No. : 109944-15-2

Formula: C8H12N2O6

Molecular Weight: 232.19

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	Kifunensine, an alkaloid discovered in Kitasatosporia kifunense, functions as a glycosylation pathway inhibitor and immunomodulator. It strongly inhibits α-mannosidase I in the Golgi apparatus and may be utilised in studies of endoplasmic reticulum stress.
Targets(IC50)	Others,glycosidase
In vitro	**Methods**: SK-N-SH cells were pretreated with kifunensine (1 μg/ml) for 72 hours to examine the effects of ERAD inhibition on UPR and ER stress. **Results**: Kifunensine decreased UPR activation and ER stress toxicity by inhibiting ERAD, and altered lysosomal morphology and distribution.[3]
In vivo	**Methods**: Kifunensine (250 μg, administered for 3 consecutive days) was intraperitoneally injected into C57BL/6 mice to investigate the role of MHCII glycosylation in carbohydrate antigen-specific immune responses of Parazacco spilurus subsp. spilurus. **Results**: Kifunensine treatment significantly reduced PSA-driven immune response, which could be restored by adoptive transfer of normally glycosylated APCs. [4]

Solubility Information

Solubility	DMSO: 8 mg/mL (34.45 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: 0.5 mg/mL (2.15 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	4.3068 mL	21.5341 mL	43.0682 mL
5 mM	0.8614 mL	4.3068 mL	8.6136 mL
10 mM	0.4307 mL	2.1534 mL	4.3068 mL
50 mM	0.0861 mL	0.4307 mL	0.8614 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

Chen H, et al. Synthesis of kifunensine thioanalogs and their inhibitory activities against HIV-RT and α-mannosidase. Carbohydr Res. 2013 Jan 10;365:1-8.
Hering KW, et al. A practical synthesis of kifunensine analogues as inhibitors of endoplasmic reticulum alpha-mannosidase I. J Org Chem. 2005 Nov 25;70(24):9892-904.
Hyung Lim Elfrink, et al. Inhibition of Endoplasmic Reticulum Associated Degradation Reduces Endoplasmic Reticulum Stress and Alters Lysosomal Morphology and Distribution. Mol Cells. 2013 Apr 30; 35(4): 291-297.
Ryan SO, et al. MHCII glycosylation modulates Bacteroides fragilis carbohydrate antigen presentation. J Exp Med. 2011 May 9;208(5):1041-53.