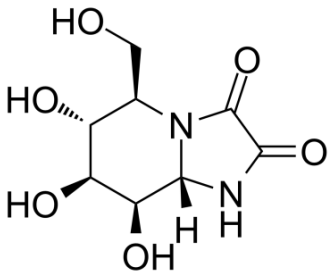
Kifunensine

Cat. No.:	HY-19332
CAS No.:	109944-15-2
Molecular Formula:	$C_8H_{12}N_2O_6$
Molecular Weight:	232.19
Target:	Others
Pathway:	Others
Storage:	Powder -20°C 3 years In solvent -80°C 6 months -20°C 1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : 11.9 mg/mL (51.25 mM; Need ultrasonic)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	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

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 1.19 mg/mL (5.13 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 1.19 mg/mL (5.13 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 1.19 mg/mL (5.13 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Kifunensine, a potent and selective inhibitor of class I α-mannosidases isolated from Actinomycete, prevents α-mannosidases I from trimming mannose residues on glycoproteins. Kifunensine inhibits ERAD[1][2][3].

In Vitro

Kifunensine, an alkaloid from actinomycete Kitasatosporia kifunense 9482, is the most efficient nhibitor of a-mannosidase I, blocking N-glycan synthesis at an8GlcNAc$_2$ (Man8) or Man9GlcNAc$_2$ (Man9) stage[3].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

RT-PCR[3].

Cell Line:	Hybridoma cells expressing a human IgG1 monoclonal Antibody[3].
Concentration:	2 μg/mL.
Incubation Time:	4 days.
Result:	Significantly reduced the lentil lectin binding. Kifunensine is the most effective among the inhibitors tested in producing antibodies containing oligomannose residues without fucose.

REFERENCES

[1]. Yongao Xiong, et al. Glycoform Modification of Secreted Recombinant Glycoproteins through Kifunensine Addition during Transient Vacuum Agroinfiltration. Int J Mol Sci. 2018 Mar; 19(3): 890.

[2]. Hiroshi Kayakiri, et al. Structure of Kifunensine, a New Immunomodulator Isolated from an Actinomycete. J. Org. Chem. 1989,54,4015-4016.

[3]. Qun Zhou, et al. Development of a Simple and Rapid Method for Producing Non-Fucosylated Oligomannose Containing Antibodies With Increased Effector Function. Biotechnol Bioeng. 2008 Feb 15;99(3):652-65.

[4]. 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.

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