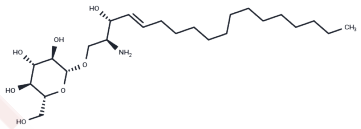
Data Sheet (Cat.No.T78493)

TargetMol

Glucosylsphingosine

Chemical Properties



CAS No. : 52050-17-6

Formula: C24H47NO7

Molecular Weight: 461.63

Storage: Keep away from direct sunlight,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	Glucosylsphingosine (Lyso-Gb1) is a naturally occurring glycosyl ceramide, a metabolite of GBA (acid β-glucosidase), involved in cellular recognition, signaling, and intercellular interactions.Glucopsychosine accumulates in certain neurodegenerative diseases (e.g., Gaucher disease), disrupts lysosomal function through activation of mammalian target of rapamycin complex 1 (mTORC1), and is a noncompetitive inhibitor of glucocerebrosidase.
Targets(IC50)	Glucokinase,Drug Metabolite,glycosidase,mTOR
In vitro	**Methods**: MCF7 cells were treated with glucosylsphingosine (20-45 μM, 48 hours), and cell death was determined by PI and Hoechst-33342 staining. **Results**: Glucosylsphingosine killed MCF7 cells independently of apoptosis, ferroptosis, and necroptosis, and induced cell death in a dose-dependent manner, with an LC50 of 33 μM.[4]
In vivo	**Methods**: Adult male C57BL/6JRj mice were treated with glucosylsphingosine (10 mg/kg, subcutaneous injection, daily, for 12 consecutive weeks) and the inflammatory changes in the mice were observed. **Results**: Glucosylsphingosine accumulated in peripheral tissues and induced hematological symptoms in mice, such as decreased hemoglobin and hematocrit, increased spleen weight, and mild inflammatory tissue reactions, indicating that it induced visceral inflammatory reactions in mice. [6]

Solubility Information

Solubility	H2O: 100 mg/mL (216.62 mM),Sonication is recommended. DMSO: 80 mg/mL (173.3 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 (7.15 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	2.1662 mL	10.8312 mL	21.6624 mL
5 mM	0.4332 mL	2.1662 mL	4.3325 mL
10 mM	0.2166 mL	1.0831 mL	2.1662 mL
50 mM	0.0433 mL	0.2166 mL	0.4332 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

Hurvitz N, et al. Glucosylsphingosine (lyso-Gb1) as a Biomarker for Monitoring Treated and Untreated Children with Gaucher Disease. Int J Mol Sci. 2019 Jun 21;20(12):3033.
Dekker N, et al. Elevated plasma glucosylsphingosine in Gaucher disease: relation to phenotype, storage cell markers, and therapeutic response. Blood. 2011 Oct 20;118(16):e118-27.
Schueler UH, et al. Toxicity of glucosylsphingosine (glucopsychosine) to cultured neuronal cells: a model system for assessing neuronal damage in Gaucher disease type 2 and 3. Neurobiol Dis. 2003 Dec;14(3):595-601.
Stahl-Meyer K, et al. Galactosyl- and glucosylsphingosine induce lysosomal membrane permeabilization and cell death in cancer cells. PLoS One. 2022 Nov 21;17(11):e0277058.
Atsumi S, et al. Accumulation of tissue glucosylsphingosine in Gaucher-like mouse induced by the glucosylceramidase inhibitor cyclophellitol. Arch Biochem Biophys. 1993 Jul;304(1):302-4.
Lukas J, et al. Glucosylsphingosine Causes Hematological and Visceral Changes in Mice-Evidence for a Pathophysiological Role in Gaucher Disease. Int J Mol Sci. 2017 Oct 20;18(10):2192.