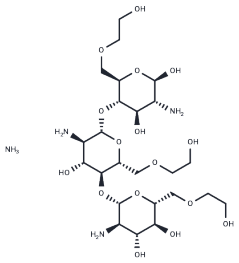
Data Sheet (Cat.No.T13708)

TargetMol

Glycol chitosan

Chemical Properties



CAS No. : 123938-86-3

Formula:

Molecular Weight:

Storage: 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	Glycol chitosan, a chitosan derivative with hydrophilic ethylene glycol branches, inhibits E. coli, S. aureus, and S. enteritidis growth (MICs: 4 μg/mL, 32 μg/mL, and <0.5 μg/mL), and enhances membrane permeability and leakage in Glycine max [Harosoy 63W] cells.
Targets(IC50)	Antibacterial
In vitro	The hydrophobic modification of Glycol chitosan has been validated, with derivatives such as Glycol chitosan with a 5β-cholanic acid moiety and deoxycholic acid-Glycol chitosan, capable of self-assembling into nanoparticles, demonstrating potential as carriers for hydrophobic drugs and genes [2]. Glycol chitosan can be covalently bonded with hydrophobic drugs to create amphiphilic compounds that form nanoparticles (NPs) useful in cell imaging and drug delivery. These derivatives are effectively utilized to transport antimicrobial and anticancer agents, employing either physical encapsulation or chemical conjugation methods. Glycol chitosan derivatives are advantageous for cell imaging and drug delivery due to their exceptional tumor-targeting capabilities stemming from the enhanced permeability and retention (EPR) effect, minimal cytotoxicity, chemical modifiability, high biocompatibility, and degradability [1].

Solubility Information

Solubility	DMSO: 11.67 mg/mL H2O: 7.5 mg/mL (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 2.00 mg/mL,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.*

Reference

Lin F, et al. Glycol Chitosan: A Water-Soluble Polymer for Cell Imaging and Drug Delivery. Molecules. 2019 Nov 29; 24(23). pii: E4371.

Yu A, et al. Mucoadhesive dexamethasone-glycol chitosan nanoparticles for ophthalmic drug delivery. Int J Pharm. 2020 Feb 15;575:118943.

Young DH, et al. Effect of Chitosan on Membrane Permeability of Suspension-Cultured Glycine max and Phaseolus vulgaris Cells. Plant Physiol. 1982 Nov;70(5):1449-54.

Stephen Inbaraj B, et al.Synthesis, characterization and antibacterial activity of superparamagnetic nanoparticles modified with glycol chitosan.Sci Technol Adv Mater. 2012 Feb 2;13(1):015002.

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