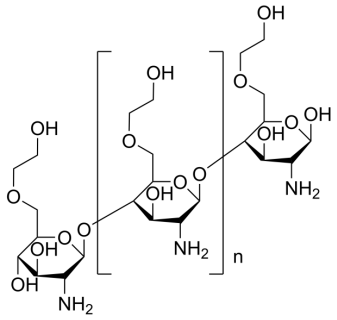
Glycol chitosan

Cat. No.:	HY-135969		
CAS No.:	123938-86-3		
Molecular Weight:	82685.58		
Target:	Bacterial		
Pathway:	Anti-infection		
Storage:	Powder	-20°C	3 years
	In solvent	-80°C	6 months
		-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro	DMSO : 50 mg/mL (0.60 mM; Need ultrasonic) H_2O : 7.5 mg/mL (0.09 mM; Need ultrasonic)
In Vivo	1. Add each solvent one by one: PBS Solubility: 50 mg/mL (0.60 mM); Clear solution; Need ultrasonic 2. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline Solubility: ≥ 2.5 mg/mL (0.03 mM); Clear solution 3. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline) Solubility: ≥ 2.5 mg/mL (0.03 mM); Clear solution

BIOLOGICAL ACTIVITY

Description	Glycol chitosan is a chitosan derivative with ethylene glycol branches. Glycol chitosan enhances membrane permeability and leadkage in Glycine max Harosoy 63W cells. Glycol chitosan is biocompatible and biodegradable[1][2][3]. Glycol chitosan inhibits E. coli, S. aureus and S. enteritidis growths with MIC values of 4 μg/mL, 32 μg/mL and <0.5 μg/mL, respectively[4].
IC_{50} & Target	MIC: 4 μg/mL (E. coli), 32 μg/mL (S. aureus) and <0.5 μg/mL (S. enteritidis)[4]
In Vitro	Glycol chitosan derivatives have been successfully applied to deliver antimicrobial agents and anticancer drugs such as chemodrugs, genes, and photosensitizers (PSs), either by physical encapsulation or chemical conjugation. Glycol chitosan can be directly linked with hydrophobic drugs to generate amphiphilic compounds that can also form nanoparticles (NPs) for cell imaging and drug delivery. The use of Glycol chitosan derivatives for cell imaging and drug delivery has several advantages, including superb tumor-homing ability in the case of Glycol chitosan NPs based on enhanced permeability and retention (EPR) effect, low cytotoxicity, ease of chemical modification, great biocompatibility, and biodegradability[1]. ?The hydrophobic modification of Glycol chitosan is already confirmed, such as Glycol chitosan bearing a 5β-cholanic acid moiety and deoxycholic acid-Glycol chitosan, could self-assemble into nanoparticles, acting as a promising vehicle for hydrophobic drugs and genes[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

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

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

[3]. 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.

[4]. 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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