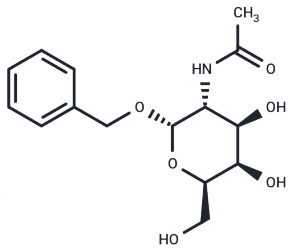
Data Sheet (Cat.No.T12282)

TargetMol

Benzyl-α-GalNAc

Chemical Properties



CAS No. : 3554-93-6

Formula: C15H21NO6

Molecular Weight: 311.33

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	Benzyl-α-GalNAc (O-glycosylation-IN-1) is an effective inhibitor of O-glycosylation used to reduce the levels of mucin on the cell surface; it can inhibit the synthesis of O-glycosylated mucin in a human pancreatic cancer cell model. Benzyl-α-GalNAc effectively inhibits the proliferation and activation of LX-2 cells and suppresses the expression of collagen I/III, making it suitable for studies on liver fibrosis. Benzyl-α-GalNAc can be used in research on glycobiology, tumor metastasis, liver fibrosis, and chemotherapeutic sensitization.
Targets(IC50)	Others,Transferase
In vitro	**Methods**: Benzyl-α-GalNAc (2.5 mM) was added to cerebellar granule neurons from newborn (P5-7) SD rats and incubated for 48 hours. Western blot analysis was performed to validate the salicylate modification level of O-linked glycoproteins in cell lysates using biotinylated PNA. **Results**: Benzyl-α-GalNAc treatment resulted in a significant increase (>4-fold) in PNA binding in cell lysates, confirming its effective inhibition of O-linked glycosylation. [1]
In vivo	**Methods**: Male C57BL/6 mice aged 6–8 weeks were fed a high-fat diet (HFD) for 10 weeks to induce a metabolic syndrome-like liver disease (MASLD) model. Following 10 weeks of HFD feeding, mice received consecutive tail vein injections of Benzyl-α-GalNAc (0.5, 1.0, 2.0 mg/mouse) daily for 4 weeks. **Results**: Benzyl-α-GalNAc dose-dependently reduced total hepatic O-GlcNAc and HNF1α O-GlcNAc levels, decreased serum ALT, AST, and TG levels, and alleviated hepatic lipid deposition, collagen deposition, and HSC activation (α-SMA).[1]

Solubility Information

Solubility	DMSO: 240 mg/mL (770.89 mM),Sonication is recommended. H2O: 8.33 mg/mL (26.76 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: 2 mg/mL (6.42 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	3.212 mL	16.0601 mL	32.1203 mL
5 mM	0.6424 mL	3.212 mL	6.4241 mL
10 mM	0.3212 mL	1.606 mL	3.212 mL
50 mM	0.0642 mL	0.3212 mL	0.6424 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

Vyas AA, et al. Potent glycan inhibitors of myelin-associated glycoprotein enhance axon outgrowth in vitro. J Biol Chem. 2005 Apr 22;280(16):16305-10.

Wang Y, et al. OGT-enriched Hepatocyte-derived Extracellular Vesicles Promote Capillarization of Liver Sinusoidal Endothelial Cells in Metabolic Dysfunction-associated Steatotic Liver Disease. Cell Mol Gastroenterol Hepatol. 2026 Jan 7;20(5):101721.