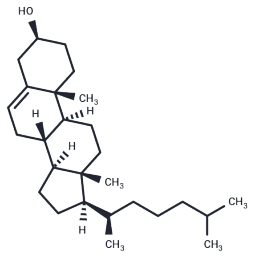
Data Sheet (Cat.No.T0760)

TargetMol

Cholesterol

Chemical Properties



CAS No. : 57-88-5

Formula: C27H46O

Molecular Weight: 386.65

Storage: Store at low temperature,Store under nitrogen
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	Cholesterol is the primary sterol in mammals, accounting for approximately 20–25% of the plasma membrane structure. It plays a key role in regulating membrane fluidity, permeability, and protein function. As an endogenous agonist of estrogen-related receptor α (ERRα), cholesterol is widely involved in metabolic regulation and serves as a precursor for the synthesis of hormones and bile acids. It is commonly used in experimental models of hyperlipidemia.
Targets(IC50)	Estrogen Receptor/ERR,Endogenous Metabolite,Antibacterial,Liposome,MRP,ROR
In vitro	**METHODS**: CD4+ T lymphocytes were incubated with 7-KC (17.5-70 μM) and Cholesterol-MβCD (17.5-70 μM) for 10 min, and T cell membrane order and disorder were assessed using di-4 ANEPPDHQ fluorescent dye. **RESULTS**: After exposure to 7-KC, T cell membrane order was altered in a dose-dependent manner, with significant reconstitution of membrane order observed only in cells treated with 35 μM Cholesterol, while reconstitution with l7.5 μM Cholesterol induced minimal effects. [1] **METHODS**: Human gastric cancer cells SNU601, SNU638 and SNU216 were treated with Cholesterol (25-100 μM) for 48 h and cell viability was measured using MTT Assay. **RESULTS**: Cholesterol caused a dose-dependent decrease in cell viability in all three cell lines. [2]
In vivo	**METHODS**: To induce hypercholesterolemia, STD:ddY mice were fed a high cholesterol diet (1% cholesterol, 0.5% cholic acid, 0.5% olive oil and 93% standard mouse chow). **RESULTS**: Cholesterol can be used to construct a mouse model of hypercholesterolemia. [3] **METHODS**: To induce hyperlipidemia, CD-1 mice were fed a high cholesterol diet (2% cholesterol and 0.6% sodium deoxycholate). **RESULTS**: Cholesterol can be used to construct a mouse model of hyperlipidemia. [4]

Solubility Information

Solubility	H2O: < 1 mg/mL (insoluble) DMSO: < 1mg/mL (insoluble) Ethanol: 11.42 mg/mL (29.54 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.5863 mL	12.9316 mL	25.8632 mL
5 mM	0.5173 mL	2.5863 mL	5.1726 mL
10 mM	0.2586 mL	1.2932 mL	2.5863 mL
50 mM	0.0517 mL	0.2586 mL	0.5173 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

Sengupta S, et al. Cholesterol-dependent plasma membrane order (Lo) is critical for antigen-specific clonal expansion of CD4+ T cells. Sci Rep. 2021 Jul 7;11(1):13970.
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Fang X X, Wei P, Zhao K, et al.Fatty acid-binding proteins 3, 7, and 8 bind cholesterol and facilitate its egress from lysosomes.Journal of Cell Biology.2024, 223(4).
Lim SC, et al. Cholesterol induces autophagic and apoptotic death in gastric carcinoma cells. Int J Oncol. 2014 Mar; 44(3):805-11.
Tawara K, et al. Mode of action of probucol in reducing serum cholesterol in mice. Jpn J Pharmacol. 1986 Jan;40(1): 123-33.
Chen X, Cao S, Tao L, et al.Establishment of MS LOC platform and its pilot application in clinical lipidomics.Talanta. 2024: 127314.
Díaz-Zagoya JC, et al. Effects of high rosuvastatin doses on hepatocyte mitochondria of hypercholesterolemic mice. Sci Rep. 2021 Aug 4;11(1):15809.

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