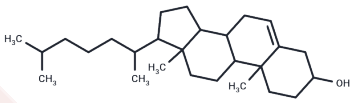
Data Sheet (Cat.No.T0760)

TargetMol

Cholesterol

Chemical Properties



CAS No. : 57-88-5

Formula: C27H46O

Molecular Weight: 386.66

Appearance: no data available

Storage: store at low temperature,store under nitrogen
Powder: -20°C for 3 years | In solvent: -80°C for 1 year

Biological Description

Description	Cholesterol (cholesteryl alcohol) is a natural product that is the major sterol in mammals and an agonist of estrogen-related receptor α (ERRα). Cholesterol is widely found in the cell membranes of animals and is also used in the synthesis of several important hormones and bile acids.
Targets(IC50)	Estrogen Receptor/ERR,Endogenous Metabolite,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	DMSO: Insoluble Ethanol: 11.10 mg/mL (28.71 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	12.9313 mL	25.8625 mL
5 mM	0.5173 mL	2.5863 mL	5.1725 mL
10 mM	0.2586 mL	1.2931 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.

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.
Qiao S, Bao L, Wang K, et al. Activation of a Specific Gut Bacteroides-Folate-Liver Axis Benefits for the Alleviation of Nonalcoholic Hepatic Steatosis. Cell Reports. 2020, 32(6): 108005
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.