bio-techne
TOCRIS

Print Date: Nov 1st 2024

Certificate of Analysis

www.tocris.com

Product Name: **Cholesterol** **Catalog No.: 7945** **Batch No.: 1**

CAS Number: 57-88-5

IUPAC Name: (3β)-Cholest-5-en-3-ol

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: $C_{27}H_{46}O$

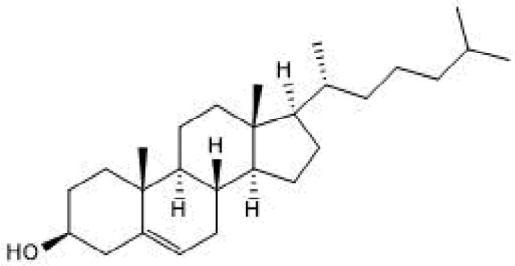
Batch Molecular Weight: 386.65

Physical Appearance: White solid

Solubility: ethanol to 50 mM with gentle warming
chloroform to 100 mM

Storage: Store at -20°C

Batch Molecular Structure:



2. ANALYTICAL DATA

HPLC: Shows 99.3% purity

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Product Name: **Cholesterol** **Catalog No.: 7945** **1**

CAS Number: 57-88-5

IUPAC Name: (3β)-Cholest-5-en-3-ol

Description:

Cholesterol is a major sterol in all mammalian organisms; it is an essential component that makes up about 20-25% of the structural lipids of cell membranes. Cholesterol determines the permeability and fluidity characteristics of the cell membranes. Cholesterol is an endogenous ligand for estrogen-related receptor α (ERRα). It is also a precursor in several biosynthetic pathways, including steroid hormones and the active form of vitamin D. Cholesterol is a component of lipid nanoparticles (LNPs), and is important in modulating membrane stability, with the effect being context dependent. When combined with lipids that have low gel-li... Please see product specific page on www.tocris.com for full description.

Physical and Chemical Properties:

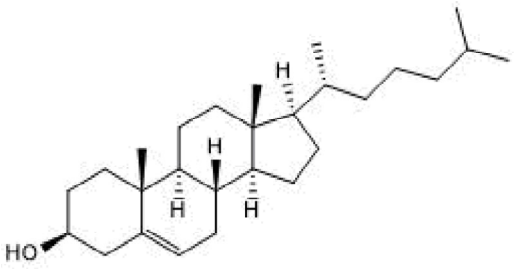
Batch Molecular Formula: $C_{27}H_{46}O$

Batch Molecular Weight: 386.65

Physical Appearance: White solid

Minimum Purity: ≥95%

Batch Molecular Structure:



Storage: Store at -20°C

Solubility & Usage Info:

ethanol to 50 mM with gentle warming
chloroform to 100 mM

Stability and Solubility Advice:

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a 45-60°C water bath).

Information concerning product stability, particularly in solution, has rarely been reported and in most cases we can only offer a general guide. *Unless contradicted by product-specific protocols or instructions, our standard recommendations apply:

SOLIDS: Provided storage is as stated on the product label and the vial is kept tightly sealed, the product can be stored for up to 6 months from date of receipt.

SOLUTIONS: We recommend that stock solutions, once prepared, are stored aliquoted in tightly sealed vials at -20°C or below and used within 1 month. Wherever possible solutions should be made up and used on the same day.

References:

Tenchov *et al* (2021) Lipid nanoparticles - from liposomes to mRNA vaccine delivery, a landscape of research diversity and advancement. ACS Nano ***15*** 16982. PMID: 34181394.

Ghanbari *et al* (2020) Cholesterol as an endogenous ligand of ERRα promotes ERRα-mediated cellular proliferation and metabolic target gene expression in breast cancer cells. Cell ***9*** 1765. PMID: 32717915.

Cheng *et al* (2018) Dendrimer-based lipid nanoparticles deliver therapeutic fah mRNA to normalize liver function and extend survival in a mouse model of hepatorenal tyrosinemia type I. Adv.Mater ***30*** e1805308. PMID: 30368954.