

Product Data Sheet

Product Name: 4 β -hydroxy Cholesterol

Cat. No.: GC10762

Chemical Properties

Cas. No. 17320-10-4

Chemical Name 5 cholesten-3 β ,4 β -diol

SMILES O[C@H]([C@@H](O)CC[C@H]2(C)C1=CC[C@H]3([H])[C@H]2([H])CC[C@@H]4(C)[C@@H]3([H])CC[C@H]4([H])[C@H](C)CCCC(C)C

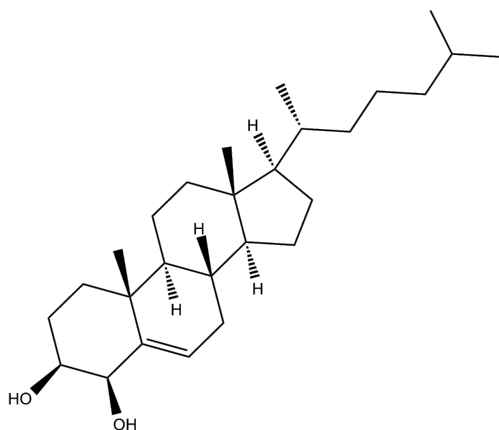
Formula C₂₇H₄₆O₂ M.Wt 402.7

Solubility $\leq$ 20mg/ml in ethanol; 0.1mg/ml in DMSO; 2mg/ml in dimethyl formamide Storage Store at -20°C

General tips For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution: ship with blue ice All other available size: ship with RT, or blue ice upon request.

Structure



Background

Caution: Product has not been fully validated for medical applications. For research use only.

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4 β -hydroxy Cholesterol is an endogenous marker for CYP3A4/5 activity [1].

Cytochrome P450 3A4 (CYP3A4) and CYP3A5 are important drug-metabolizing enzymes that oxidize small foreign organic molecules, such as toxins or drugs, and remove them from the body. They exhibit a large variation in hepatic expression and biological activity between different individuals. Patients treated with drugs known to be strong inducers of CYP3A4/5 have highly elevated levels of 4 β -hydroxycholesterol in the circulation [1].

4 β -hydroxy Cholesterol, an endogenous oxysterol found in human circulation, is formed from cholesterol by cytochrome P450 (CYP) 3A4 and CYP3A5. In 12 different occasions during a 3-month period, The CVs for 4 β -hydroxycholesterol ranged from 4.8 to 13.2% with an average CV of 7.1% at an average concentration of 30.8 ng/ml. In 24 volunteers treated with rifampicin, a strong CYP3A4/5 inducer, 4 β -hydroxycholesterol increased in a dose-dependent way, while the isomer 4 α -hydroxycholesterol was not influenced by rifampicin treatment. These results suggested that 4 β -hydroxy Cholesterol is an endogenous marker for CYP3A4/5 activity [1].

Reference:

[1]. Diczfalusy U, Kanebratt KP, Bredberg E, et al. 4beta-hydroxycholesterol as an endogenous marker for CYP3A4/5 activity. Stability and half-life of elimination after induction with rifampicin. Br J Clin Pharmacol. 2009 Jan;67(1):38-43.

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