

Product Data Sheet

Product Name: 7 α ,25-dihydroxy Cholesterol

Cat. No.: GC14433

Chemical Properties

Cas. No. 64907-22-8

Chemical Name (3 β ,7 α)-cholest-5-ene-3,7,25-triol

SMILES O[C@@H]1C=C2C[C@@H](O)CC[C@]2(C)[C@]3([H])[C@]1([H])[C@@](CC[C@]4([H])[C@H](C)CCCC(C)(C)O)([H])[C@]4(C)CC3

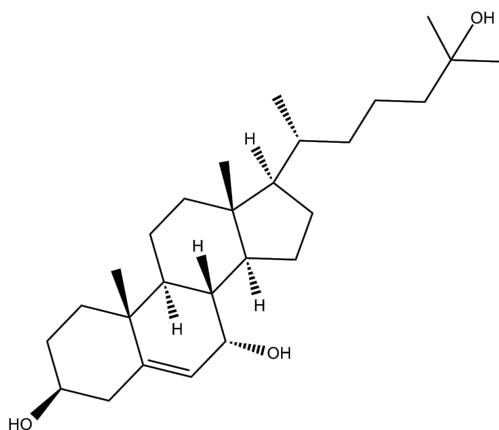
Formula C₂₇H₄₆O₃ M.Wt 418.7

Solubility $\leq$ 2mg/ml in ethanol;0.1mg/ml in DMSO;20mg/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

7 α ,25-dihydroxy Cholesterol (7 α ,25-DHC, 7 α ,25-OHC) is a potent and selective GPR183 agonist [1].

Epstein-Barr virus (EBV)-induced gene 2 (EBI2, also known as GPR183) is an orphan G protein-

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coupled receptor that is highly expressed in spleen and up-regulated upon Epstein–Barr-virus infection. GPR183 is required for humoral immune responses and polymorphisms in the receptor is associated with inflammatory autoimmune diseases [1][2].

7 α ,25-dihydroxy Cholesterol is a potent and selective GPR183 (EBI2) agonist and most potent EBI2 ligand with EC₅₀ and K_d values of 140 pM and 450 pM, respectively. In a competition binding study, 7 α ,25-OHC competed for binding with IC₅₀ value of 242 pM. In EBI2-expressing cells, 7 α ,25-OHC dose-dependently inhibited forskolin-induced cAMP with IC₅₀ value of 2 nM. 7 α ,25-OHC was probably the endogenous ligand for EBI2. In EBI2-expressing mouse B and T cells, 7 α ,25-dihydroxy Cholesterol stimulated cell migration with IC₅₀ value of around 500 pM, but had no effect on EBI2-deficient cells [1].

In EBI2-deficient mice, unseparated splenocytes, B cells and T cells were completely unresponsive to 7 α ,25-OHC stimulation [1]. Mice deficient in Ch25h, a key enzyme for the generation of 7 α , 25-OHC, failed to position activated B cells within the spleen to the outer follicle [2].

References:

- [1]. Liu C, Yang XV, Wu J, et al. Oxysterols direct B-cell migration through EBI2. *Nature*. 2011 Jul 27;475(7357):519-23.
- [2]. Hannedouche S, Zhang J, Yi T, et al. Oxysterols direct immune cell migration via EBI2. *Nature*. 2011 Jul 27;475(7357):524-7.

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