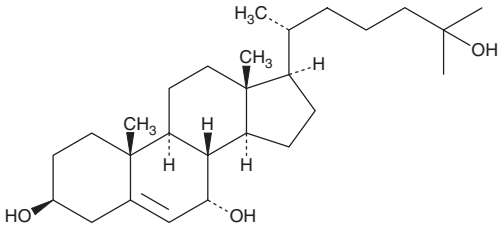
PRODUCT INFORMATION

7α,25-dihydroxy Cholesterol

Item No. 11032

CAS Registry No.: 64907-22-8
Formal Name: (3β,7α)-cholest-5-ene-3,7,25-triol
Synonym: 7α,25-DHC
MF: $C_{27}H_{46}O_3$
FW: 418.7
Purity: ≥95%
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥2 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

7α,25-dihydroxy Cholesterol (7α,25-DHC) is supplied as a crystalline solid. A stock solution may be made by dissolving the 7α,25-DHC in the solvent of choice. 7α,25-DHC is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of 7α,25-DHC in DMSO is approximately 100 µg/ml and approximately 2 and 20 mg/ml in ethanol and DMF, respectively.

7α,25-DHC is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, 7α,25-DHC should first be dissolved in ethanol and then diluted with the aqueous buffer of choice. 7α,25-DHC has a solubility of approximately 500 µg/ml in a 1:2 solution of ethanol:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

GPR183 (also known as Epstein-Barr virus-induced gene 2) is an orphan G protein-coupled receptor (GPCR) that is highly expressed in spleen and is required for humoral immune responses, including B cell migration and T cell-dependent antibody production.[1,2] 7α,25-DHC is a potent agonist of GPR183 that induces specific activation of the receptor with an EC_{50} value of 50 nM (K_d = 450 pM).[1,2] At concentrations below 3 µM, it does not show any appreciable binding activity when tested against eight different nuclear hormone receptors including LXR and thirty-one different GPCRs in a panel of reporter gene assays.[2] 7α,25-DHC can act as a potent chemokine, affecting migration of immune cells expressing GPR183 both *in vitro* (EC_{50} = 500 pM) and *in vivo*.[1,2]

References

1. Liu, C., Yang, X.V., Wu, J., *et al*. Oxysterols direct B-cell migration through EB12. *Nature* **475(7357)**, 519-523 (2011).
2. Hannedouche, S., Zhang, J., Yi, T., *et al*. Oxysterols direct immune cell migration *via* EBI2. *Nature* **475(7357)**, 524-527 (2011).

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