

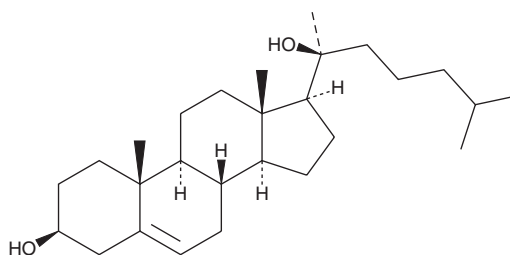
PRODUCT INFORMATION



20(S)-hydroxy Cholesterol

Item No. 20103

CAS Registry No.: 516-72-3
Formal Name: cholest-5-ene-3 β ,20-diol
Synonym: 20 α -hydroxy Cholesterol
MF: C₂₇H₄₆O₂
FW: 402.7
Purity: \geq 98%
Supplied as: A crystalline solid
Storage: -20°C
Stability: \geq 4 years



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

Laboratory Procedures

20(S)-hydroxy Cholesterol is supplied as a crystalline solid. A stock solution may be made by dissolving the 20(S)-hydroxy cholesterol in the solvent of choice. 20(S)-hydroxy Cholesterol is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide, which should be purged with an inert gas. The solubility of 20(S)-hydroxy cholesterol in these solvents is approximately 20, 0.1, and 2 mg/ml, respectively.

20(S)-hydroxy Cholesterol is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, 20(S)-hydroxy cholesterol should first be dissolved in ethanol and then diluted with the aqueous buffer of choice. 20(S)-hydroxy Cholesterol has a solubility of approximately 0.3 mg/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

20(S)-hydroxy Cholesterol is an allosteric agonist of the smoothened (Smo) receptor that activates the hedgehog (Hh) signaling pathway with an EC₅₀ value of approximately 3 μ M in a gene transcription reporter assay using NIH3T3 cells.¹ 20(S)-hydroxy Cholesterol is necessary for normal Hh signaling. It induces Smo accumulation in primary cilia, an early event in signaling, and binds to the extracellular, cysteine-rich domain of Smo.^{1,2} 20(S)-hydroxy Cholesterol also stimulates osteogenic differentiation of pluripotent bone marrow stromal cells, a process mediated *via* Hh and Notch signaling.³⁻⁵

References

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2. Nedelcu, D., Liu, J., Xu, Y., *et al.* Oxysterol binding to the extracellular domain of smoothened in hedgehog signaling. *Nat. Chem. Biol.* **9**(9), 557-564 (2013).
3. Kha, H.T., Basseri, B., Shouhed, D., *et al.* Oxysterols regulate differentiation of mesenchymal stem cells: Pro-bone and anti-fat. *J. Bone Miner. Metab.* **19**(5), 830-840 (2004).
4. Dwyer, J.R., Sever, N., Carlson, M., *et al.* Oxysterols are novel activators of the hedgehog signaling pathway in pluripotent mesenchymal cells. *J. Biol. Chem.* **282**(12), 8959-8968 (2007).
5. Kim, W.-K., Meliton, V., Tetradis, S., *et al.* Osteogenic oxysterol, 20(S)-hydroxycholesterol, induces notch target gene expression in bone marrow stromal cells. *J. Bone Miner. Metab.* **25**(4), 782-795 (2010).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

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CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA

PHONE: [800] 364-9897
[734] 971-3335

FAX: [734] 971-3640

CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM