

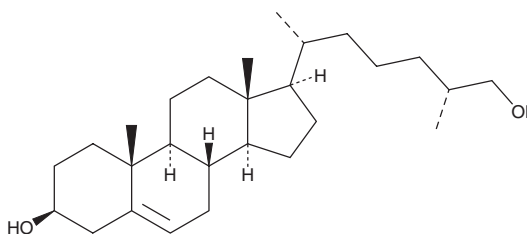
# PRODUCT INFORMATION



## 25(R)-27-hydroxy Cholesterol

Item No. 14790

**CAS Registry No.:** 20380-11-4  
**Formal Name:** (25R)-cholest-5-ene-3 $\beta$ ,26-diol  
**Synonym:** (25R)-26-hydroxy Cholesterol  
**MF:** C<sub>27</sub>H<sub>46</sub>O<sub>2</sub>  
**FW:** 402.7  
**Purity:**  $\geq$ 95%  
**Supplied as:** A crystalline solid  
**Storage:** -20°C  
**Stability:**  $\geq$ 2 years



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

### Laboratory Procedures

25(R)-27-hydroxy Cholesterol is supplied as a crystalline solid. A stock solution may be made by dissolving the 25(R)-27-hydroxy cholesterol in the solvent of choice. 25(R)-27-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 25(R)-27-hydroxy cholesterol in these solvents is approximately 20, 0.1, and 2 mg/ml, respectively.

25(R)-27-hydroxy Cholesterol is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, 25(R)-27-hydroxy cholesterol should first be dissolved in ethanol and then diluted with the aqueous buffer of choice. 25(R)-27-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

The liver X receptors (LXR $\alpha$  and LXR $\beta$ ) are nuclear hormone receptors whose native ligands, oxysterols, induce the expression of genes involved in cholesterol and fatty acid metabolism.<sup>1</sup> 27-hydroxy Cholesterol, a sterol 27-hydroxylase-mediated cholesterol hydroxylation product, activates LXR $\alpha$  and LXR $\beta$  *in vitro* with EC<sub>50</sub> values of 85 and 71 nM, respectively, and is a potent suppressor of cholesterol biosynthesis.<sup>2,3</sup> 25(R)-27-hydroxy Cholesterol is the more predominant-occurring (~80%) stereoisomer of the endogenous oxysterol 27-hydroxy cholesterol.<sup>4,5</sup>

### References

1. Zhang, Y. and Mangelsdorf, D.J. LuXuRies of lipid homeostasis: The unity of nuclear hormone receptors, transcription regulation, and cholesterol sensing. *Mol. Interv.* **2**(2), 78-87 (2002).
2. Fu, X., Menke, J.G., Chen, Y., et al. 27-Hydroxycholesterol is an endogenous ligand for liver X receptor in cholesterol-loaded cells. *J. Biol. Chem.* **276**(42), 38378-38387 (2001).
3. Axelson, M. and Larsson, O. Low density lipoprotein (LDL) cholesterol is converted to 27-hydroxycholesterol in human fibroblasts. *J. Bio. Chem.* **270**(25), 15102-15110 (1995).
4. Javitt, N.B. 26-Hydroxycholesterol: Synthesis, metabolism, and biologic roles. *J. Lipid Res.* **31**, 1527-1533 (1990).
5. Javitt, N.B. 25R,26-Hydroxycholesterol revisited: Synthesis, metabolism, and biologic roles. *J. Lipid Res.* **43**, 665-670 (2002).

#### 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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