**PRODUCT INFORMATION**

**25(R)-27-hydroxy Cholesterol**

*Item No. 14790*

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**CAS Registry No.:** 20380-11-4  
**Formal Name:** (25R)-cholest-5-ene-3β,26-diol  
**Synonym:** (25R)-26-hydroxy Cholesterol  
**MF:** C₂₇H₄₆O₂  
**FW:** 402.7  
**Purity:** ≥95%  
**Supplied as:** A crystalline solid  
**Storage:** -20°C  
**Stability:** ≥2 years

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**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 (LXRα and LXRβ) are nuclear hormone receptors whose native ligands, oxysterols, induce the expression of genes involved in cholesterol and fatty acid metabolism.\(^1\) 27-hydroxy Cholesterol, a sterol 27-hydroxylase-mediated cholesterol hydroxylation product, activates LXRα and LXRβ in vitro with EC\(_{50}\) values of 85 and 71 nM, respectively, and is a potent suppressor of cholesterol biosynthesis.\(^2,3\) 25(R)-27-hydroxy Cholesterol is the more predominant-occurring (~80%) stereoisomer of the endogenous oxysterol 27-hydroxy cholesterol.\(^4,5\)

**References**