

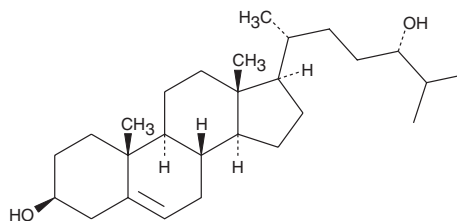
# PRODUCT INFORMATION



## 24(S)-hydroxy Cholesterol

Item No. 10009931

**CAS Registry No.:** 474-73-7  
**Formal Name:** cholest-5-ene-3 $\beta$ ,24S-diol  
**Synonym:** Cerebrosterol  
**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:**  $\geq$ 4 years



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

### Laboratory Procedures

24(S)-hydroxy Cholesterol is supplied as a crystalline solid. A stock solution may be made by dissolving the 24(S)-hydroxy cholesterol in the solvent of choice. 24(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 24(S)-hydroxy cholesterol in ethanol and DMF is approximately 20 and 2 mg/ml, respectively, and approximately 100  $\mu$ g/ml in DMSO.

24(S)-hydroxy Cholesterol is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, 24(S)-hydroxy cholesterol should first be dissolved in ethanol and then diluted with the aqueous buffer of choice. 24(S)-hydroxy Cholesterol has a solubility of approximately 500  $\mu$ g/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

4(S)-hydroxy Cholesterol is a side-chain substituted oxysterol that has important roles in cholesterol homeostasis. It is generated by the action of CYP46 on cholesterol in the brain and diffuses across the blood-brain barrier to the systemic circulation where it can modulate cell signaling, be used for further sterol biosynthesis, or be metabolized in the liver.<sup>1</sup> 24(S)-hydroxy cholesterol potently activates LXR $\alpha$  and LXR $\beta$  nuclear receptors (EC<sub>50</sub> = 4 and 3  $\mu$ M, respectively), causing upregulation of cholesterol-lowering genes.<sup>1-3</sup> In the brain, this oxysterol controls cholesterol processing to facilitate neurological repair during Alzheimer's disease and other neuropathological conditions.<sup>1</sup>

### References

1. Vaya, J. and Schipper, H.M. Oxysterols, cholesterol homeostasis, and Alzheimer disease. *J. Neurochem.* **102**, 1727-1737 (2007).
2. Janowski, B.A., Grogan, M.J., Jones, S.A., et al. Structural requirements of ligands for the oxysterol liver X receptors LXR $\alpha$  and LXR $\beta$ . *Proc. Natl. Acad. Sci. USA* **96(1)**, 266-271 (1999).
3. Geyeregger, R., Zeyda, M., and Stulnig, T.M. Liver X receptors in cardiovascular and metabolic disease. *Cell. Mol. Life Sci.* **63**, 524-539 (2006).

#### 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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