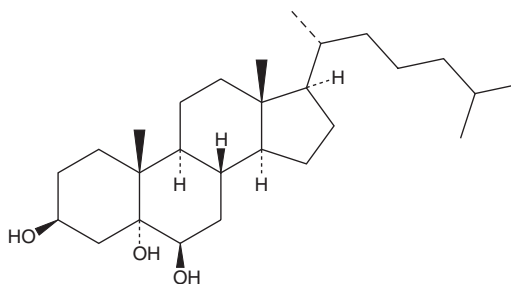


# PRODUCT INFORMATION

## 5 $\alpha$ ,6 $\beta$ -Dihydroxycholestanol

Item No. 25538

**CAS Registry No.:** 1253-84-5  
**Formal Name:** cholestane-3 $\beta$ ,5 $\alpha$ ,6 $\beta$ -triol  
**Synonyms:** Cholestanetriol, NSC 124751, NSC 18178, 5 $\alpha$ ,6 $\beta$ -di-OHC  
**MF:** C<sub>27</sub>H<sub>48</sub>O<sub>3</sub>  
**FW:** 420.7  
**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

5 $\alpha$ ,6 $\beta$ -Dihydroxycholestanol is supplied as a crystalline solid. A stock solution may be made by dissolving the 5 $\alpha$ ,6 $\beta$ -dihydroxycholestanol in the solvent of choice. 5 $\alpha$ ,6 $\beta$ -Dihydroxycholestanol is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide, which should be purged with an inert gas. The solubility of 5 $\alpha$ ,6 $\beta$ -dihydroxycholestanol in these solvents is approximately 20, 0.1, and 2 mg/ml, respectively.

5 $\alpha$ ,6 $\beta$ -Dihydroxycholestanol is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, 5 $\alpha$ ,6 $\beta$ -dihydroxycholestanol should first be dissolved in ethanol and then diluted with the aqueous buffer of choice. 5 $\alpha$ ,6 $\beta$ -Dihydroxycholestanol 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

5 $\alpha$ ,6 $\beta$ -Dihydroxycholestanol is an oxysterol metabolite of cholesterol formed from conversion of cholesterol epoxides by 5,6-epoxysterol hydrolase.<sup>1,2</sup> It inhibits NMDA-mediated calcium influx in HEK293 cells expressing NR1/NR2B NMDA receptors in a concentration-dependent manner. It also binds to voltage-gated sodium (Na<sub>v</sub>) channels and decreases action potentials in hippocampal neurons *in vitro* when used at a concentration of 10  $\mu$ M.<sup>2</sup> It increases survival of spinal cord motoneurons, cortical neurons, and cerebellar granule neurons *in vitro* when used at concentrations ranging from 5 to 15  $\mu$ M.<sup>3</sup> 5 $\alpha$ ,6 $\beta$ -Dihydroxycholestanol is neuroprotective in a rat model of cerebral ischemia when administered at a dose of 12 mg/kg and increases latency to seizure onset and reduces severity of seizures induced by pentylenetetrazole (PTZ; Item No. 18682) in rats. 5 $\alpha$ ,6 $\beta$ -Dihydroxycholestanol has been used as a replacement for cholesterol in the study of cholesterol binding proteins.<sup>4</sup>

### References

- Aringer, L. and Eneroth, P. Formation and metabolism *in vitro* of 5,6-epoxides of cholesterol and  $\beta$ -sitosterol. *J. Lipid Res.* **15**(4), 389-398 (1974).
- Tang, L., Yan, M., Leng, T., *et al.* Cholestane-3 $\beta$ , 5 $\alpha$ , 6 $\beta$ -triol suppresses neuronal hyperexcitability via binding to voltage-gated sodium channels. *Biochem. Biophys. Res. Commun.* **496**(1), 95-100 (2018).
- Hu, H., Zhou, Y., Leng, T., *et al.* The major cholesterol metabolite cholestane-3 $\beta$ ,5 $\alpha$ ,6 $\beta$ -triol functions as an endogenous neuroprotectant. *J. Neurosci.* **34**(34), 11426-11438 (2014).
- Sheng, R., Kim, H., Lee, H., *et al.* Cholesterol selectively activates canonical Wnt signalling over non-canonical Wnt signalling. *Nat. Commun.* **5**:4393, (2014).

#### 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.

#### WARRANTY AND LIMITATION OF REMEDY

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