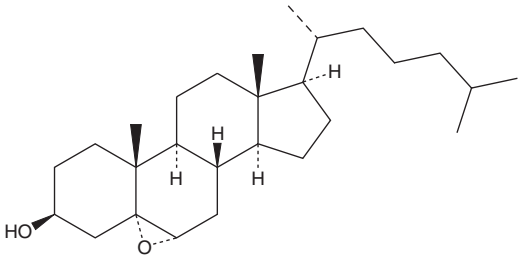
PRODUCT INFORMATION

5α,6α-epoxy Cholestanol

Item No. 25539

CAS Registry No.: 1250-95-9
Formal Name: (3β,5α,6α)-5,6-epoxy-cholestan-3-ol
Synonyms: Cholesterol 5α,6α-epoxide, 5α,6α-Epoxycholesterol, NSC 18176
MF: $C_{27}H_{46}O_2$
FW: 402.7
Purity: ≥95%
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥4 years



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

Laboratory Procedures

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

5α,6α-epoxy Cholestanol is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, 5α,6α-epoxy cholestanol should first be dissolved in ethanol and then diluted with the aqueous buffer of choice. 5α,6α-epoxy Cholestanol 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

5α,6α-epoxy Cholestanol is an oxysterol and a metabolite of cholesterol produced by oxidation.[1] 5α,6α-epoxy Cholestanol accumulates in MCF-7 breast cancer cells in a reactive oxygen species-dependent manner following tamoxifen and PBPE application and induces triacylglycerol biosynthesis by binding to liver X receptor β (LXRβ).[2] 5α,6α-epoxy Cholestanol levels are increased in rat aorta and mesenteric artery following orchidectomy, an effect that can be prevented by a DHA-supplemented diet.[1] Levels are also increased in post-mortem frontal and occipital cortex of patients with Alzheimer's disease.[3]

References

1. Villalpando, D.M., Rojas, M.M., García, H.S., *et al.* Dietary docosahexaenoic acid supplementation prevents the formation of cholesterol oxidation products in arteries from orchidectomized rats. *PLoS One* **12(10)**, e0185805 (2017).
2. Segala, G., de Medina, P., Iuliano, L., *et al.* 5,6-Epoxy-cholesterols contribute to the anticancer pharmacology of tamoxifen in breast cancer cells. *Biochem. Pharmacol.* **86(1)**, 175-189 (2013).
3. Testa, G., Staurenghi, E., Zerbinati, C., *et al.* Changes in brain oxysterols at different stages of Alzheimer's disease: Their involvement in neuroinflammation. *Redox Biol.* **10**, 24-33 (2016).

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