

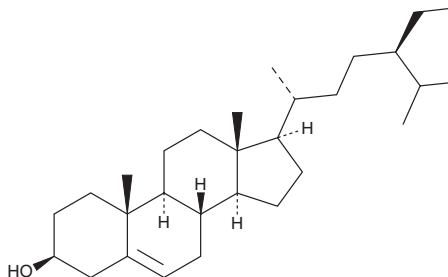
# PRODUCT INFORMATION



## 24 $\alpha$ -ethyl Cholesterol (technical grade)

Item No. 11756

**CAS Registry No.:** 83-46-5  
**Formal Name:** stigmast-5-en-3 $\beta$ -ol  
**Synonyms:** Cupreol,  $\alpha$ -Dihydrofucosterol, NSC 8096, NSC 18173, NSC 49083, Rhamnol,  $\beta$ -Sitosterol, SKF14463, 22,23-dihydro Stigmasterol  
**MF:** C<sub>29</sub>H<sub>50</sub>O  
**FW:** 414.7  
**Purity:**  $\geq$ 70%  
**Supplied as:** A crystalline solid  
**Storage:** -20°C  
**Stability:**  $\geq$ 4 years  
**Item Origin:** Plant/Unknown Sp.



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

### Laboratory Procedures

24 $\alpha$ -ethyl Cholesterol (technical grade) is supplied as a crystalline solid. A stock solution may be made by dissolving the 24 $\alpha$ -ethyl cholesterol (technical grade) in the solvent of choice, which should be purged with an inert gas. 24 $\alpha$ -ethyl Cholesterol (technical grade) is soluble in organic solvents such as ethanol and dimethyl formamide. The solubility of 24 $\alpha$ -ethyl cholesterol (technical grade) in these solvents is approximately 0.25 and 3 mg/ml, respectively.

### Description

24 $\alpha$ -ethyl Cholesterol is a phytosterol that has been found in *S. plebia* and has diverse biological activities.<sup>1-5</sup> It protects lard from thermal oxidation when used at concentrations of 0.02 and 0.04%.<sup>1</sup> 24 $\alpha$ -ethyl Cholesterol (100  $\mu$ M) induces glucose uptake and lipolysis in primary rat differentiated adipocytes and adipogenesis in primary rat preadipocytes.<sup>2</sup> It is cytotoxic to MCF-7 breast cancer cells (IC<sub>50</sub> = 264.83  $\mu$ M).<sup>3</sup> 24 $\alpha$ -ethyl Cholesterol increases protein levels of the glucocorticoid receptor in TGF- $\beta$ 1-induced human bronchial smooth muscle cells and prevents pulmonary fibrosis in a mouse model of allergic asthma induced by ovalbumin.<sup>4</sup> Dietary administration of 24 $\alpha$ -ethyl cholesterol (0.5%) reduces cholesterol-induced increases in liver weight and hepatic levels of cholesterol (Item No. 9003100) in rabbits.<sup>5</sup> 24 $\alpha$ -ethyl Cholesterol has also been used in the generation of lipid nanoparticles (LNPs) for the delivery of mRNA *in vitro* and *in vivo*.<sup>6</sup> Formulations containing 24 $\alpha$ -ethyl cholesterol have been used as dietary supplements.

### References

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2. Chai, J.W., Lim, S.L., Kanthimathi, M.S., *et al. Genes Nutr.* **6(2)**, 181-188 (2011).
3. Hadrian, E., Sari, A.P., Mayanti, T., *et al. J. Chem.* **23(1)**, 200-209 (2023).
4. Xu, J., Yang, L., and Lin, T. *Pulm. Pharmacol. Ther.* **78**, 102183 (2023).
5. Ikeda, I., Kawasaki, A., Samezima, K., *et al. J. Nutr. Sci. Vitaminol. (Tokyo)* **27(3)**, 243-251 (1981).
6. Medjmedj, A., Ngalle-Loth, A., Clemençon, R., *et al. Nanomaterials (Basel)* **12(14)**, 2446 (2022).

#### 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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