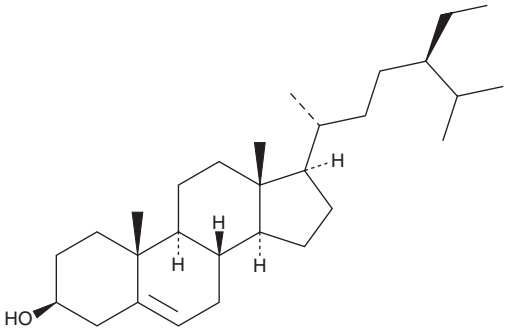
PRODUCT INFORMATION

24α-ethyl Cholesterol

Item No. 37386

CAS Registry No.:	83-46-5
Formal Name:	stigmast-5-en-3β-ol
Synonyms:	Cupreol, α-Dihydrofucosterol, NSC 8096, NSC 18173, NSC 49083, Rhamnol, β-Sitosterol, SKF 14463, 22,23-dihydro Stigmasterol
MF:	$C_{29}H_{50}O$
FW:	414.7
Purity:	≥95%
Supplied as:	A solid
Storage:	-20°C
Stability:	≥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

24α-ethyl Cholesterol is supplied as a solid. A stock solution may be made by dissolving the 24α-ethyl cholesterol in the solvent of choice, which should be purged with an inert gas. 24α-ethyl Cholesterol is soluble in the organic solvents chloroform and ethanol. 24α-ethyl Cholesterol is soluble in chloroform at a concentration of approximately 20 mg/ml and is slightly soluble in ethanol.

Description

24α-ethyl Cholesterol is a phytosterol that has been found in *S. plebian* and has diverse biological activities.[1-5] It protects lard from thermal oxidation when used at concentrations of 0.02 and 0.04%.[1] 24α-ethyl Cholesterol (100 µM) induces glucose uptake and lipolysis in primary rat differentiated adipocytes and adipogenesis in primary rat preadipocytes.[2] It is cytotoxic to MCF-7 breast cancer cells (IC_{50} = 264.83 µM).[3] 24α-ethyl Cholesterol increases protein levels of the glucocorticoid receptor in human bronchial smooth muscle cells cultured with TGF-β1 and prevents pulmonary fibrosis in a mouse model of allergic asthma induced by ovalbumin.[4] Dietary administration of 24α-ethyl cholesterol (0.5%) reduces cholesterol-induced increases in liver weight and hepatic levels of cholesterol (Item No. 9003100) in rabbits.[5] 24α-ethyl Cholesterol has also been used in the generation of lipid nanoparticles (LNPs) for the delivery of mRNA *in vitro* and *in vivo*.[6] Formulations containing 24α-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. Indones. 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)

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