

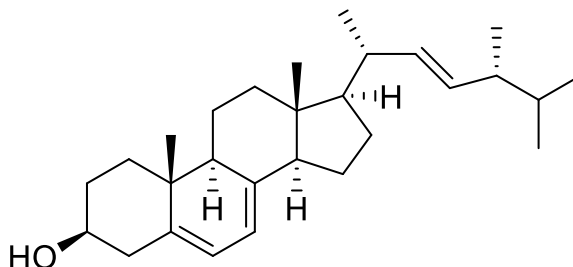
Ergosterol

Catalog number: L-6005

Molecular Formula: C₂₈H₄₄O

MW: 396.66

CAS#: 57-87-4



Alternate Names: (3S,9S,10R,13S,14S,17R)-17-((2R,5R,E)-5,6-dimethylhept-3-en-2-yl)-10,13,17-trimethyl-2,3,4,9,10,11,12,13,14,15,16,17-dodecahydro-1H-cyclopenta[a]phenanthren-3-ol, Provitamin D2

Solubility: ~200 mg/mL chloroform, 0.5 mg/mL ethanol

Storage and Handling: Store at 4 °C or below. Stock solutions should be stored frozen (-20°C or below).

Background: Ergosterol is a sterol found in the cell membranes of yeasts, molds, and other fungi that plays a role in fungi similar to cholesterol in animal cells by helping to maintain membrane fluidity, integrity, and function. Since the ergosterol pathway is absent in mammals, drugs targeting it have been developed as anti-fungal agents. It is also transformed to vitamin D2 by UV light. Substituting sterols for cholesterol in lipid nanoparticle (LNP) formulations can influence morphology, internal structure, and endosomal escape. These analogs can result in substantial increases in gene delivery via LNPs.

References:

- 1) R.A. Fromtling "Overview of medically important antifungal azole derivatives." Clin. Microbiol. Rev. 1988, 1(2), 187-217.
- 2) S.R. Koyyalamudi et al. "Vitamin D2 formation and bioavailability from Agaricus bisporus button mushrooms treated with ultraviolet irradiation". Journal of Agricultural and Food Chemistry. 2009, 57 (8): 3351-3355.
- 2) M. Herrera et al, "Illuminating endosomal escape of polymorphic lipid nanoparticles that boost mRNA delivery" Biomaterials Science, 2021, 9:4289-4300
- 3) S. Patel et al, "Naturally-occurring cholesterol analogues in lipid nanoparticles induce polymorphic shape and enhance intracellular delivery of mRNA" Nature communication, 2020, 11, 983

Hazardous Properties and Cautions: The toxicological and pharmacological properties of this compound are not fully known. For further information see the MSDS on request. This product is manufactured and shipped only in small quantities, intended for research and development in a laboratory utilizing prudent procedures for handling chemicals of unknown toxicity, under the supervision of persons technically qualified to evaluate potential risks and authorized to enforce appropriate health and safety measures. As with all research chemicals, precautions should be taken to avoid unnecessary exposures or risks.

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Technical Data Sheet, Rev 1, 12/3/25- **For research use only.** Not intended for diagnostic or therapeutic use.