

# PRODUCT DATA SHEET

## Ergosterol

**Catalog number:** 1122, 1122-k

**Synonyms:** Ergosta-5,7,22-trien-3 $\beta$ -ol

**Source:** synthetic or plant?

**Solubility:** chloroform

**CAS number:** 57-87-4

**Molecular Formula:** C<sub>28</sub>H<sub>44</sub>O

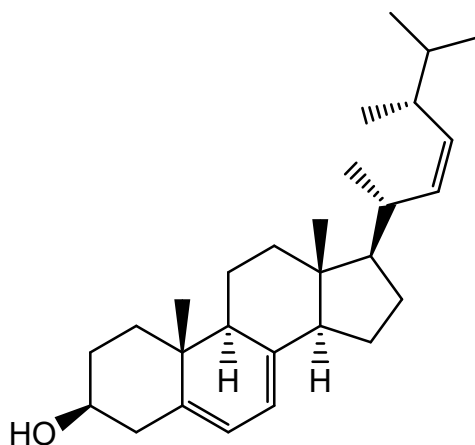
**Molecular Weight:** 397

**Storage:** -20°C

**Purity:** TLC >90%, GC >90%

**TLC System:** hexane/ethyl ether (60:40)

**Appearance:** solid



### Application Notes:

Ergosterol is a sterol that is found in yeast and fungal membranes but is not present in plants or animals. It modulates the fluidity, permeability and thickness of membranes making it critical for membrane stability.<sup>1</sup> Ergosterol that is incorporated into membranes may associate with sphingolipids in microdomains which appear to have important roles in membrane organization and function.<sup>2</sup> Ergosterol is a useful precursor to vitamin D2 and is converted when exposed to UV irradiation. Due to its being found in yeast and fungal membranes, but not in plants or animals, ergosterol is a useful target for antifungal drugs and as a fungal biomarker.<sup>3</sup> The fungus *Agaricus blazei* Murill has been recognized as having several beneficial dietary properties and ergosterol was identified as the compound responsible for its anti-tumor activity.<sup>4</sup> Yeast uses ergosterol as an important physiological target of stress signaling.<sup>5</sup>

### Selected References:

1. Y. Zhang et al. "Requirement for Ergosterol in V-ATPase Function Underlies Antifungal Activity of Azole Drugs" *PLoS Pathogens*, Vol. 6(6) pp. 1-13, 2010
2. M. Bagnat et al. "Lipid rafts function in biosynthetic delivery of proteins to the cell surface in yeast" *PNAS*, Vol. 97(7) pp. 3254-3259, 2000
3. K. Grey et al. "Amphotericin primarily kills yeast by simply binding ergosterol" *PNAS*, doi: 10.1073/pnas.1117280109, 2012
4. T. Takaku et al. "Isolation of an Antitumor Compound from *Agaricus blazei* Murill and Its Mechanism of Action" *The Journal of Nutrition*, Vol. 131(5) pp. 1409-1413, 2001
5. F. Montañés et al. "Repression of ergosterol biosynthesis is essential for stress resistance and is mediated by the Hog1 MAP kinase and the Mot3 and Rox1 transcription factors" *Molecular Microbiology*, Vol. 79(4) pp. 1008-1023, 2011

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