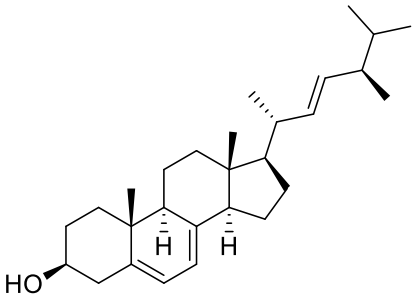
Product data sheet

MedKoo Cat#: 600135 Name: Ergosterol CAS#: 57-87-4 Chemical Formula: $C_{28}H_{44}O$ Exact Mass: 396.33922 Molecular Weight: 396.65	
Product supplied as:	Powder
Purity (by HPLC):	≥ 98%
Shipping conditions	Ambient temperature
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years.
	In solvent: -80°C 3 months; -20°C 2 weeks.

1. Product description:

Ergosterol is a sterol found in fungi, and named for ergot, the common name of members of the fungal genus Claviceps from which ergosterol was first isolated. Ergosterol does not occur in plant or animal cells; reports of its isolation from plants are generally ascribed to fungal contamination of the plant material from which steroids are being isolated. Ergosterol is a component of yeast and other fungal cell membranes, serving many of the same functions that cholesterol serves in animal cells. Ergosterol is provitamin form of vitamin D2; natural ultraviolet (UV) irradiation of ergosterol, isolated or in situ, results in vitamin D2 production that can contribute to satisfying human dietary vitamin D requirements. (Source: http://en.wikipedia.org/wiki/Ergosterol).

2. CoA, QC data, SDS, and handling instruction

SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under "QC And Documents" section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
DMSO	0.055	0.14
DMF	2.0	5.04
Ethanol	1.55	3.91
Ethanol:PBS (pH 7.2) (1:2)	0.3	0.76

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.52 mL	12.61 mL	25.21 mL
5 mM	0.50 mL	2.52 mL	5.04 mL
10 mM	0.25 mL	1.26 mL	2.52 mL
50 mM	0.05 mL	0.25 mL	0.50 mL

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator

Please refer the product web page under section of "Calculator"

6. Recommended literature which reported protocols for in vitro and in vivo study

In vitro study

1. Cai D, Yan H, Liu J, Chen S, Jiang L, Wang X, Qin J. Ergosterol limits osteoarthritis development and progression through activation of Nrf2 signaling. Exp Ther Med. 2021 Mar;21(3):194. doi: 10.3892/etm.2021.9627. Epub 2021 Jan 8. PMID: 33488803; PMCID: PMC7812583.
2. Sun X, Liu Y, Feng X, Li C, Li S, Zhao Z. The key role of macrophage depolarization in the treatment of COPD with ergosterol both in vitro and in vivo. Int Immunopharmacol. 2020 Feb;79:106086. doi: 10.1016/j.intimp.2019.106086. Epub 2019 Dec 23. PMID: 31874368.

In vivo study

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1. Ikarashi N, Hoshino M, Ono T, Toda T, Yazawa Y, Sugiyama K. A Mechanism by which Ergosterol Inhibits the Promotion of Bladder Carcinogenesis in Rats. Biomedicines. 2020 Jun 27;8(7):180. doi: 10.3390/biomedicines8070180. PMID: 32605038; PMCID: PMC7400612.
2. Yazawa Y, Ikarashi N, Hoshino M, Kikkawa H, Sakuma F, Sugiyama K. Inhibitory effect of ergosterol on bladder carcinogenesis is due to androgen signaling inhibition by brassicasterol, a metabolite of ergosterol. J Nat Med. 2020 Sep;74(4):680-688. doi: 10.1007/s11418-020-01419-4. Epub 2020 Jun 1. PMID: 32488609.

7. Bioactivity

Biological target:

Ergosterol is the primary sterol found in fungi, with antioxidative, anti-proliferative, and anti-inflammatory effects.

In vitro activity

ER (Ergosterol) significantly increased the protein expression of Nrf2 and HO-1 in chondrocytes in a dose-dependent manner (Fig. 1C and D). Nuclear protein was extracted for assays and the results showed that ER upregulated nuclear Nrf2 expression (Fig. 1E). ER treatment caused a significant increase in luciferase activity (Fig. 1F), which indicated that ER activated the HO-1 promoter transactivation activity.

Reference: Exp Ther Med. 2021 Mar; 21(3): 194. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7812583/

In vivo activity

The number of Con A-dependent aggregates was significantly higher in the carcinogenic group than that in the control group. In contrast, the number of cell aggregates was significantly lower in rats treated with ergosterol compared to the carcinogenesis group (Table 2).

Reference: Biomedicines. 2020 Jul; 8(7): 180. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7400612/

Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.