

Product Data Sheet

Product Name: 24 α -methyl Cholesterol

Cat. No.: GC13431

Chemical Properties

Cas. No. 474-62-4

Chemical Name (3 β ,24R)-ergost-5-en-3-ol

SMILES O[C@H](C1)CC[C@@]2(C)C1=CC[C@]3([H])[C@]2([H])CC[C@@]4(C)[C@@]3([H])CC[C@]4([H])[C@H](C)CC[C@@H](C)C(C)C

Formula C₂₈H₄₈O M.Wt 400.7

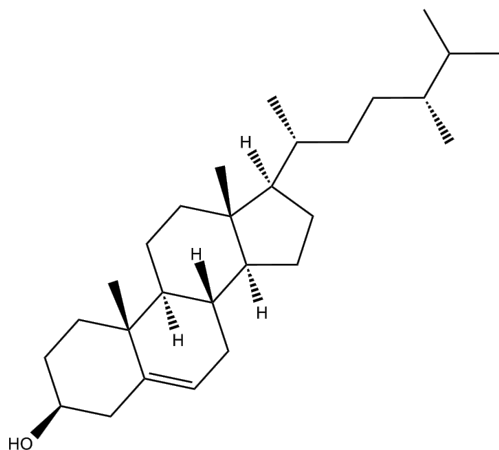
Solubility ≤ 0.25 mg/ml in ethanol; 1mg/ml in dimethyl formamide; 0.8mg/ml in Water (ultrasonic and warming and heat)

Storage Store at 2-8°C

General tips For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.

Structure



Protocol

Caution: Product has not been fully validated for medical applications. For research use only.

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Cell experiment: The effect of campesterol on the viable cell number was assessed by XTT assay. HUVECs were treated with various concentrations (10, 20, 30, 40 and 50 µg/mL) of campesterol and incubated at 37 °C in a humidified incubator for 24 h, a XTT working solution was added to each well. The cells were incubated at 37 °C for 2 h and the optical density was measured using a microplate reader at 450 nm[1].

References:

[1]. Choi JM, et al. Identification of campesterol from Chrysanthemum coronarium L. and its antiangiogenic activities. Phytother Res. 2007 Oct;21(10):954-9.

Background

24α-methyl Cholesterol is an agonist of liver X receptors (LXR).

Liver X receptors (LXRs) are ligand-dependent transcription factors involved in the transcriptional control of lipid metabolism. LXRs function as nuclear cholesterol sensors that are activated by elevated intracellular cholesterol levels in multiple cell types. Activation of LXRs induces the expression of various genes involved in cholesterol absorption, transport, efflux, and excretion. In addition to their function in lipid metabolism, LXRs have also been found to modulate immune and inflammatory responses in macrophages. LXRα is highly expressed in the liver and at lower levels in the adrenal glands, adipose, intestine, lung, macrophages, and kidney, and LXRβ is ubiquitously expressed [2].

24α-methyl Cholesterol was a phytosterol found in vegetables, nuts, fruits, and seeds that competitively inhibited the absorption of intestinal cholesterol and decreased the transcription of genes important for cholesterol metabolism [3]. 24α-methyl Cholesterol acted as an agonist at liver X receptors (LXR) and suppressed the proliferation of prostate and breast cancer cells [1].

References:

[1] Chuu C P, Kokontis J M, Hiipakka R A, et al. Modulation of liver X receptor signaling as novel therapy for prostate cancer[J]. Journal of biomedical science, 2007, 14(5): 543-553.
[2] Zelcer N, Tontonoz P. Liver X receptors as integrators of metabolic and inflammatory signaling[J]. The Journal of clinical investigation, 2006, 116(3): 607-614.

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[3] Segura R, Javierre C, Lizarraga M A, et al. Other relevant components of nuts: phytosterols, folate and minerals[J]. British Journal of Nutrition, 2006, 96(S2): S36-S44.

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