

Product Data Sheet

Product Name: Stigmastanol

Cat. No.: GD21338

Chemical Properties

Cas. No. 19466-47-8

Formula C₂₉H₅₂O

M.Wt 416.72

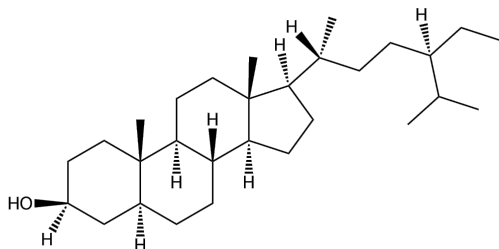
Solubility

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

Cell experiment [1]:

Cell lines PC12 cells

Preparation Method The PC12 cells were seeded into a 96-well plate (1×10^5 cells/well). After 6h of incubation, the cells were treated with different concentrations of D-gal, α -linolenic acid, Stigmastanol, D-gal/ α -linolenic acid, and D-gal/Stigmastanol for 24h. Cell viability for each group was assessed using the MTT assay.

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

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA

Product Data Sheet

Reaction Conditions 1μM, 2μM, 3μM, 4μM, 5μM, 10μM; 24h

Applications Stigmastanol inhibited D-gal-induced PC12 cells apoptosis.

Animal experiment [2]:

Animal models Sprague-Dawley rat models

Preparation Method The solid food was withheld but a free access to oral liquid cholesterol-free diet consisting of 5% glucose in lactated Ringer's was allowed following the surgery and throughout the experiment. Twenty-four hours postsurgery, animals were divided into the following 10 treatment groups: nonpurified nanostructured aluminosilicate (NSAS) 50mg/kg; sodium NSAS 50mg/kg; protonated (by ion-exchange column) NSAS 20, 50, and 100mg/kg; hydrochloric acid-treated NSAS 50mg/kg; back-converted to sodium form (by NaOH) NSAS 50mg/kg; Stigmastanol 50mg/kg; ezetimibe 10mg/kg; and normal saline (control). All compounds were administered by oral gavage.

Dosage form 50mg/kg; po; single administered

Applications Stigmastanol significantly inhibited intestinal cholesterol absorption after oral administration.

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

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA

Product Data Sheet

References:

- [1]. Zhang Y, Xu D, Zhang X, et al. Rice bran oil rescues cognitive decline in D-galactose-induced aging mice by inhibiting A β accumulation and Tau hyperphosphorylation induced oxidative stress and neuroinflammation. Food Science and Human Wellness. 2025 Jul 1; 14(7).
- [2]. Gershkovich P, Darlington J, Sivak O, et al. Inhibition of intestinal absorption of cholesterol by surface-modified nanostructured aluminosilicate compounds. Journal of pharmaceutical sciences. 2009 Jul 1; 98(7): 2390-2400.

Background

Stigmasterol is a saturated form of natural phytosterols, belonging to the phytosterol class of compounds, with a chemical structure similar to cholesterol [1]. Stigmasterol can lower blood lipids by inhibiting cholesterol absorption [2]. Stigmasterol is often used in functional foods for preventing and treating hypercholesterolemia [3].

In PC12 cells, Stigmasterol (1 μ M, 2 μ M, 3 μ M, 4 μ M, 5 μ M, 10 μ M; 24h) inhibited D-gal-induced cell apoptosis [4].

In sprague-dawley rat models, Stigmasterol (50mg/kg; po; single administered) significantly inhibited intestinal cholesterol absorption after oral administration [5].

References:

- [1]. Pinhas H, Loiseau A, Krikorian-Manoukian A, et al. 6-Amino derivatives of stigmasterol and cholesterol. Journal of Medicinal Chemistry. 1971 Nov; 14(11): 1048-1049.
- [2]. Vahouny GV, Connor WE, Habiger RG, et al. Influence of stigmasterol and stigmasteryl-phosphorylcholine, two plasma cholesterol lowering substances, on synthetic phospholipid membranes. A 2H- and 31P-NMR study. Biochimica et Biophysica Acta (BBA)-Biomembranes. 1992 Jan 10; 1103(1): 69-76.
- [3]. Gupta E. β -Sitosterol: Predominant phytosterol of therapeutic potential. Innovations in food technology: current perspectives and future goals. 2020:465-477.
- [4]. Zhang Y, Xu D, Zhang X, et al. Rice bran oil rescues cognitive decline in D-galactose-induced aging mice by inhibiting A β accumulation and Tau hyperphosphorylation induced oxidative stress and neuroinflammation. Food Science and Human Wellness. 2025 Jul 1; 14(7).

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

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA

Product Data Sheet

[5]. Gershkovich P, Darlington J, Sivak O, et al. Inhibition of intestinal absorption of cholesterol by surface-modified nanostructured aluminosilicate compounds. Journal of pharmaceutical sciences. 2009 Jul 1; 98(7): 2390-2400.

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

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA