Beta-Sitosterol (purity>75%)

Cat. No.: HY-N0171B

CAS No.: 83-46-5

Molecular Formula: $C_{29}H_{50}O$

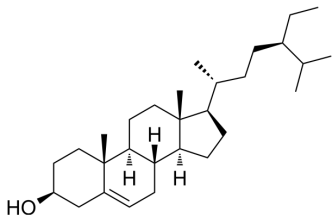
Molecular Weight: 414.71

Target: Apoptosis

Pathway: Apoptosis

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	6 months
	-20°C	1 month



BIOLOGICAL ACTIVITY

Description

Beta-Sitosterol (purity>75%) is a phytosterol with oral activity. Beta-Sitosterol (purity>75%) interferes with a variety of cell signaling pathways, including the cell cycle, apoptosis and cell proliferation. Beta-Sitosterol (purity>75%) has anti-inflammatory, antioxidant, and antitumor activities[1][2][3].

In Vitro

Beta-Sitosterol purity>75% (16 μM, 1, 3, 5 days) can inhibit the growth of MDA-MB-231 human breast cancer cells and induce cell apoptosis[1].

Beta-Sitosterol purity>75% (120, 240 μM, 24 h) shows significant dose-dependent growth inhibition on COLO 320 DM cells (IC_{50} 266.2 μM). The expression of β-catenin and PCNA antigens in human colon cancer cells was inhibited by scavenging reactive oxygen species to induce cell apoptosis[2].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Cytotoxicity Assay[1]

Cell Line:	MDA-MB-231
Concentration:	16 μM
Incubation Time:	3 days
Result:	No cytotoxicity at 16 μM

Apoptosis Analysis[1]

Cell Line:	MDA-MB-231
Concentration:	16 μM
Incubation Time:	5 days
Result:	Increased 33% apoptosis when assayed using 1×10^4 cells and a 6-fold increase in apoptosis when assayed using a smaller number of cells 5×10^3.

Western Blot Analysis[2]

Cell Line:	COLO 320 DM
Concentration:	15, 30, 60, 120 μM
Incubation Time:	24 h
Result:	Decreased β-catenin and PCNA expression.

In Vivo

Beta-Sitosterol purity>75% (10-20 mg/kg, suspended in 0.1% CMC, orally, once a day for 16 weeks) can prevent cancer in the rat model of colon cancer[2].

Beta-Sitosterol purity>75% (10, 15, 20 mg/kg, orally, for 21 consecutive days) has anti-hyperglycemic and antioxidant effects in streptozotocin (HY-13753) induced experimental hyperglycemic rat models[3].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Colon cancer rats model [2]
Dosage:	10, 20 mg/kg
Administration:	p.o., suspended in 0.1% CMC (1.0 mL)
Result:	Reduced the number of aberrant crypt and crypt multiplicity in a dose-dependent manner.

Animal Model:	Streptozotocin-induced hyperglycemia rats model[3]
Dosage:	10, 15, 20 mg/kg
Administration:	p.o.
Result:	Increased insulin levels and decreased HbA1c levels. Improved pancreatic antioxidant levels and decreased LPO levels.

REFERENCES

[1]. Awad AB, et al. Inhibition of growth and stimulation of apoptosis by beta-sitosterol treatment of MDA-MB-231 human breast cancer cells in culture. Int J Mol Med. 2000 May;5(5):541-5.

[2]. Baskar AA, et al. Chemopreventive potential of beta-Sitosterol in experimental colon cancer model--an in vitro and In vivo study. BMC Complement Altern Med. 2010 Jun 4;10:24.

[3]. Gupta R, et al. Antidiabetic and antioxidant potential of β-sitosterol in streptozotocin-induced experimental hyperglycemia. J Diabetes. 2011 Mar;3(1):29-37.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA