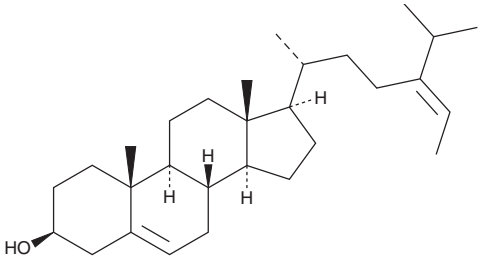
PRODUCT INFORMATION

Fucosterol

Item No. 21858

CAS Registry No.:	17605-67-3
Formal Name:	(3β,24E)-stigmasta-5,24(28)-dien-3-ol
Synonym:	*trans*-24-ethylidene Cholesterol
MF:	$C_{29}H_{48}O$
FW:	412.7
Purity:	≥98%
Supplied as:	A crystalline solid
Storage:	-20°C
Stability:	≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Fucosterol is supplied as a crystalline solid. A stock solution may be made by dissolving the fucosterol in the solvent of choice, which should be purged with an inert gas. Fucosterol is soluble in organic solvents such as ethanol and dimethyl formamide. The solubility of fucosterol in these solvents is approximately 0.25 and 1 mg/ml, respectively.

Description

Fucosterol is a plant sterol found in algae that has diverse biological activities including antioxidant, anti-inflammatory, anticancer, and antidiabetic properties among others.[1] It decreases markers of oxidative damage and increases antioxidative enzyme activity *in vitro*.[2] It reduces the expression of TNF-α and IL-6 following LPS administration by halting NF-κB and p38 MAPK signaling in RAW 264.7 murine macrophages.[3] In HEK293, MCF-7, and SiHa cells, fucosterol decreases proliferation (IC_{50}s = 185.4, 43.3, and 34.0 µg/ml, respectively).[1] It also has anticancer activity in HL-60 leukemia cells, where it inhibits cell growth, halts the cell cycle at the G_2/M transition, and induces apoptosis with maximally increased caspase-9, -8, and -3 expression at 68.8 µM.[4] In a streptozotocin rat model of diabetes, it decreases serum glucose concentrations when administered at 30 mg/kg.[5]

References

1. Abdul, Q.A., Choi, R.J., Jung, H.A., *et al.* Health benefit of fucosterol from marine algae: A review. *J. Sci. Food Agric.* **96(6)**, 1856-1866 (2015).
2. Lee, S., Lee, Y.S., Jung, S.H., *et al.* Anti-oxidant activities of fucosterol from the marine algae *Pelvetia siliquosa*. *Arch. Pharm. Res.* **26(9)**, 719-722 (2003).
3. Yoo, M.S., Shin, J.S., Choi, H.E., *et al.* Fucosterol isolated from *Undaria pinnatifida* inhibits lipopolysaccharide-induced production of nitric oxide and pro-inflammatory cytokines *via* the inactivation of nuclear factor-κB and p38 mitogen-activated protein kinase in RAW264.7 macrophages. *Food Chem.* **135(3)**, 967-975 (2012).
4. Yi, Y.B., Ji, C.F., and Yue, L. Study on human promyelocytic leukemia HL-60 cells apoptosis induced by fucosterol. *Biomed. Mater. Eng.* **24(1)**, 845-851 (2014).
5. Lee, Y.S., Shin, K.H., Kim, B.K., *et al.* Anti-diabetic activities of fucosterol from *Pelvetia siliquosa*. *Arch. Pharm. Res.* **27(11)**, 1120-1122 (2004).

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