Natural Products

ChemFaces

Daucosterol Datasheet

4th Edition (Revised in July, 2016)

[Product Information]

Name: Daucosterol

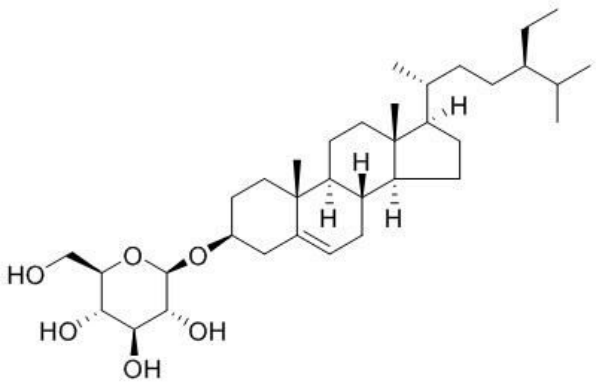
Catalog No.: CFN98713

Cas No.: 474-58-8

Purity: > 98%

M.F: $C_{35}H_{60}O_6$

M.W: 576.9



Physical Description: Powder

Synonyms:(2R,3R,4S,5S,6R)-2-[[(8S,9S,10R,13R,14S)-17-[(2R,5R)-5-ethyl-6-methylheptan-2-yl]-10,13-dimethyl-2,3,4,7,8,9,11,12,14,15,16,17-dodecahydro-1H-cyclopenta[a]phenanthren-3-yl]oxy]-6-(hydroxymethyl)oxane-3,4,5-triol.

[Intended Use]

1. Reference standards;
2. Pharmacological research;
3. Synthetic precursor compounds;
4. Intermediates & Fine Chemicals;
5. Others.

[Source]

The herbs of *Dioscorea nipponica Makino*

[Biological Activity or Inhibitors]

Daucosterol can protect mice against disseminated candidiasis by the $CD4^+$ Th1 immune response.[1]

Daucosterol has proliferation-enhancing activity for neural stem cells (NSCs), may be involved in IGF1-AKT pathway, and it as an efficient and inexpensive growth factor alternative that could be used in clinical medicine and research applications.[2]

Daucosterol exhibits moderate antibacterial activity against Bacillus subtilis and Staphylococcus aureus.[3]

Daucosterol can inhibit cancer cell proliferation by inducing autophagy through reactive oxygen species-dependent manner.[4]

Daucosterol has neuroprotective activity, could be potentially developed as a medicine for ischemic stroke treatment, can significantly reduce neuronal loss, as well as apoptotic rate and caspase-3 activity, increase the expression level of protein, diminish the down-regulation of p-AKT3 and p-GSK-3β4, thus activating the AKT5 signal pathway, diminish the down-regulation of the anti-apoptotic proteins Mcl-16 and Bcl-27, and decrease the expression level of the pro-apoptotic protein Bax8, thus raising the ratio of Bcl-2/Bax.[5]

Daucosterol has anti-cancer and apoptotic effects in human colon cancer cell line HCT-116, at different doses induces cell cycle arrest at sub-G1 phase of the cell cycle.[6]

[Solvent]

Pyridine, DMSO, Methanol, Hot water, etc.

[HPLC Method][7]

HPLC-ELSD:

Mobile phase: Methanol -H2O=95:5 ;

Flow rate: 1.0 ml/min;

Column temperature: 30 ℃;

Flow rate of air : 2.5 L/min;

Temperature of drift tube: 80 ℃.

[Storage]

2-8℃, Protected from air and light, refrigerate or freeze.

[References]

[1] Lee J H, Ju Y L, Ji H P, *et al. Vaccine, 2007, 25(19):3834-40.*

[2] Jiang L H, Yang N Y, Yuan X L, *et al. J. Steroid Biochem., 2014, 140(2):90-9.*

[3] Sultana N, Afolayan A J. *Nat. Prod. Res., 2007, 21(10):889-96.*

[4] Zhao C, She T, Wang L, *et al. Life Sci., 2015, 137:37-43.*

[5] Jiang L H, Yuan X L, Yang N Y, *et al. J. Steroid Biochem., 2015, 152:45-52.*

[6] Wang G Q, Gu J F, Gao Y C, *et al. Bangl. J. Pharmacol., 2016, 11(2).*

[7] Li H N, Liu H J, Fu XS , *et al. Chinese Journal of Experimental Traditional Medical Formulae, 2013, 19(01):119-21.*

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