Natural Products

ChemFaces

Methyl protodioscin Datasheet

4th Edition (Revised in July, 2016)

[Product Information]

Name: Methyl protodioscin

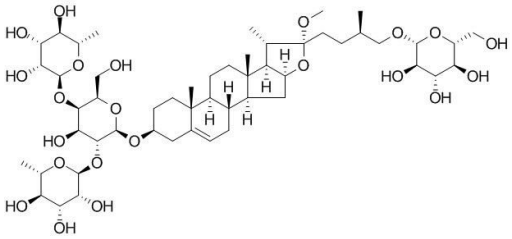
Catalog No.: CFN99585

Cas No.: 54522-52-0

Purity: >=98%

M.F: $C_{52}H_{86}O_{22}$

M.W: 1063.23



Physical Description: White powder

Synonyms:[(22R,25R)-22-Methoxy-26-(β-D-glucopyranosyloxy)furosta-5-ene-3β-yl]2-O, 4-O-di-α-L-rhamnopyranosyl-β-D-glucopyranoside;Smilax saponin B.

[Intended Use]

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

[Source]

The roots of *Dioscorea opposita Thunb.*

[Biological Activity or Inhibitors]

Methyl protodioscin(MPD) is one of the main bioactive components in the traditional Chinese medicine Dioscorea collettii var. hypoglauca (Dioscoreaceae), can induces G2/M cell cycle arrest and apoptosis in HepG2 liver cancer cells, these effects are attributed to down-regulation of Cyclin 131 and the signaling pathways leading to up-regulation of Bax and down-regulation of BCL2, suggesting that methyl protodioscin may be a novel anti-mitotic agent. [1]

Methyl protodioscin shows strong cytotoxicity against most cell lines from solid tumors with GI50 < or = 10.0 microM, especially selectively against one colon cancer line (HCT-15) and one breast cancer line (MDA-MB-435) with GI50 < 2.0 microM but moderate cytotoxicity is shown against leukemia cell lines with GI50 10-30 microM, the cytotoxicity of methyl protodioscin is a potential novel mechanism of anticancer action.[2]

Methylprotodioscin (50 mg/kg/d) can significantly inhibit bone loss in bone mineral content (BMC) and bone mineral density (BMD) in total, cancellous and cortical bones, and the decrease in bone strength indexes induced by ovariectomized (OVX) , without side effect on the uterus; suggests that it has antiosteoporotic activity in vivo.[3]

Methylprotodioscin and dioscin isolated from the root of Asparagus cochinchinensis suppress the gene expression and production of MUC5AC mucin, by directly acting on airway epithelial cells, and the results are consistent with the traditional use of Asparagus cochinchinensis as remedy for diverse inflammatory pulmonary diseases. [4]

Methyl protodioscin can inhibit the in-vitro thrombosis,decrease the dry and wet weight of thrombus and delay the occlusion time (OT), it has the effects of lowering the whole blood viscosity and plasma viscosity.[5]

Methyl protodioscin has therapeutic effects on myocardial infarction in rats, it can reduce the level of myocardium enzyme and the myocardial infarction size,and increase the capability of clearing oxygen free radical and function of the vascular endothelial cell; MPD by intravenous injection has a better effect than that by oral use.[6]

[Solvent]

Pyridine, Methanol, Ethanol, etc.

[HPLC Method][7]

Mobile phase: Acetonitrile- H2O=90:10;

Flow rate: 1.2 ml/min;

Column temperature: 35 ℃;

The wave length of determination: 208 nm.

[Storage]

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

[References]

[1] Wang G, Chen H, Huang M, *et al. Cancer Lett., 2006, 241(1):102-9.*

[2]Hu K, Yao X. *Cancer Invest., 2003, 21(3):389-93.*

[3] Yin J, Tezuka Y, Kouda K, *et al.Planta Med., 2004, 70(3):220-6.*

[4] Lee H J, Jin S P, Yong P Y, *et al.Phytomedicine International Journal of Phytotherapy & Phytopharmacology, 2015, 22(5):568-72.*

[5] Ning K Y, Li Y K, Gao H L, *et al. Traditional Chinese Drug Research & Clinical Pharmacology,2008, 19(1):3-5.*

[6] Ning K Y, Li Y K, Gao H L, *et al. Traditional Chinese Drug Research & Clinical Pharmacology,2008, 19(1):1-3.*

[7] Yao Z H, Cao X Z, Pan Y M, *et al. Journal of Instrumental Analysis, 2008, 27(5):557-9.*

[Contact]

Address:
S5-3 Building, No. 111, Dongfeng Rd.,
Wuhan Economic and Technological Development Zone,
Wuhan, Hubei 430056,
China

Email: info@chemfaces.com
Tel: +86-27-84237783
Fax: +86-27-84254680
Web: www.chemfaces.com
Tech Support: service@chemfaces.com