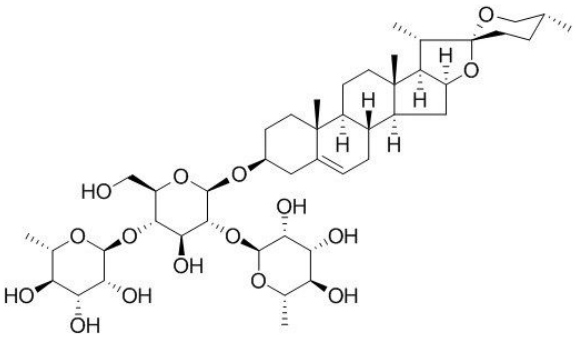
Natural Products

ChemFaces

Dioscin Datasheet

4th Edition (Revised in July, 2016)

[Product Information]



Name: Dioscin

Catalog No.: CFN99516

Cas No.: 19057-60-4

Purity: > 98%

M.F: $C_{45}H_{72}O_{16}$

M.W: 869.05

Physical Description: Cryst.

Synonyms: Diosgenin-bis-alpha-L-rhamnopyranosyl)-(1-2and1-4)-beta-D-glucopyranoside;Collettiside III.

[Intended Use]

1. Reference standards;
2. Pharmacological research;
3. Food and cosmetic research;
4. Synthetic precursor compounds;
5. Intermediates & Fine Chemicals;
6. Ingredient in supplements, beverages;
7. Others.

[Source]

The rhizome of *Dioscorea Zingiberensis C.H.Wright.*

[Biological Activity or Inhibitors]

Dioscin, a saponin extracted from the root of Polygonatum Zanlanscianense Pamp, can markedly inhibit proliferation of Hela cells, underwent apoptosis in dose- and time-dependent manner.[1]

Dioscin shows remarkable protective effect against acetaminophen-induced liver damage in vitro and in vivo by adjusting mitochondrial function.[2]

Dioscin induces generation of reactive oxygen species through mitochondria dysfunction, is capable of inducing apoptosis in mammalian cells, in which the mitochondria-initiated apoptosis pathway plays an important role.[3]

Dioscin can restore the activity of the anticancer agent adriamycin in multidrug-resistant human leukemia K562/adriamycin cells by down-regulating MDR1 via a mechanism involving NF-κB signaling inhibition.[4]

Dioscin shows little inhibition activity of tyrosinase, whereas oxyresveratrol, a known tyrosinase inhibitor, shows a strong tyrosinase inhibitory activity , and a mixture of oxyresveratrol and dioscin (IC50 = 5.1 and 5.7 ug/ml) highly increases the inhibition of tyrosinase activity with l-tyrosine or l-DOPA as the substrate as compared to either oxyresveratrol (IC50 = 7.8 and 10.9 ug/ml) or dioscin (IC50 > 100 and 100 ug/ml) alone.[5]

Dioscin has been shown to promote anticancer activity against several forms of cancers, it induces apoptosis in cancer cells through the induction of oxidative stress, peroxiredoxins 1and 6 (PRDX 1 and 6) are key targets in the process of dioscin-induced apoptosis that involves intracellular elevated ROS.[6]

Rhizoma Dioscoreae septemlobae (RDSE) and its main component dioscin (DIS) display a weak xanthine oxidase (XO) inhibition activity compared with allopurinol, therefore, they processed uricosuric and nephroprotective actions by regulation of mOAT1, mURAT1 and mOCT2.[7]

[Solvent]

Pyridine, DMSO, Ethanol, Methanol, Hot water.

[HPLC Method][8]

Mobile phase: Acetonitrile -H2O,gradient elution ;

Flow rate: 1.0 ml/min;

Column temperature: 30 ℃;

The wave length of determination: 210 nm.

[Storage]

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

[References]

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[3] Wang Y, Che C M, Chiu J F, *et al. J. Proteome Res., 2007, 6(12):4703-10.*

[4] Wang L, Meng Q, Wang C, *et al. J. Nat. Prod., 2013, 76(5):909-14.*

[5] Liang C, Lim J H, Kim S H, *et al. Food Chem., 2012, 134(2):1146-8.*

[6] Wang Z, Cheng Y, Wang N, *et al. Cancer Biol. Ther., 2012, 13(3):138-47.*

[7] Su J, Wei Y, Liu M, *et al. Arch. Pharm. Res., 2014, 37(10):1336-44.*

[8] Dong-Xiang L I, Qing L I, Guan X Y, *et al. Chinese J. Pharm. Anal., 2012, 32(4):596-8.*

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