Natural Products

ChemFaces

Deoxypodophyllotoxin Datasheet

4th Edition (Revised in July, 2016)

[Product Information]

Name: Deoxypodophyllotoxin

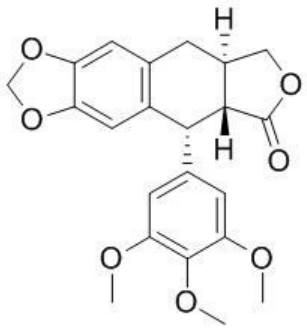
Catalog No.: CFN99888

Cas No.: 19186-35-7

Purity: > 98%

M.F: $C_{22}H_{22}O_7$

M.W: 398.4



Physical Description: Powder

Synonyms:(5R,5aR,8aR)-5-(3,4,5-trimethoxyphenyl)-5a,8,8a,9-tetrahydro-5H-isobenzofuro[5,6-f][1,3]benzodioxol-6-one; Hernandion; Anthricin; Silicicolin.

[Intended Use]

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

[Source]

The roots of *Dysosma versipellis (Hance) M.Cheng ex Ying.*

[Biological Activity or Inhibitors]

Deoxypodophyllotoxin(DOP), isolated from Juniperus sabina L, shows strong insecticidal activity against several kinds of insects, including the 5th instar larvae of silkworm, B. mori; and related lignans against larvae of Pieris rapae L.[1,2]

Deoxypodophyllotoxin induces G2 /M cell-cycle arrest followed by apoptosis through multiple cellular processes, involving the activation of ATM, upregulation of p53 and Bax, activation of caspase-3 and -7, and accumulation of PTEN resulting in the inhibition of the Akt pathway.[3]

Deoxypodophyllotoxin is a natural product , isolated from a variety of medicinal herb plants, has antitumor, antiviral, and anti-inflammatory activities; it inhibits both TTX-S (tetrodotoxin-sensitive) and TTX-R (tetrodotoxin-resistant) sodium currents in voltage clamp recording and caused a decrease in the number of action potentials (APs) in current clamp experiment; suppressive and unfavorable effects of DOP on the kinetics of sodium currents in terms of excitability of DRG neurons may greatly contribute to its antitumor and anti-inflammatory activities. [4]

Deoxypodophyllotoxin has PCA inhibitory activity, is stronger than those of prednisolone and indomethacin,suggest that it may be beneficial in regulating the immediate-type allergic reaction.[5]

Deoxypodophyllotoxin exerts both anti-angiogenic and vascular disrupting effects.[6]

Deoxypodophyllotoxin inhibits the expression of intercellular adhesion molecule-1 induced by tumor necrosis factor-alpha in murine lung epithelial cells.[7]

Deoxypodophyllotoxin decreases the mRNA levels of the Th2 cytokines, also reduces both the eotaxin and arginase I mRNA levels in a dose-dependent manner.[8]

Deoxypodophyllotoxin decreases UV-induced skin pigmentation of brown guinea pigs, suggests that it maybe applicable to treat hyperpigmentation.[9]

[Solvent]

Chloroform, Dichloromethane, Ethyl Acetate, DMSO, Acetone, etc.

[HPLC Method][10]

Mobile phase: Methanol -H2O=75:25 ;

Flow rate: 1.0 ml/min;

Column temperature: 30 ℃;

The wave length of determination: 294 nm.

[Storage]

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

[References]

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[5] Lin C X, Son MJJu H K, Moon T C, *et al. Planta Med., 2004, 70(5):474-6*.

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[9] Choi H, Lee J, Shin H J, *et al. Planta Med., 2004, 70(4):378-80.*

[10] Jin Z, Shi J F, Xiong Y R, *et al. Chinese Journal of New Drugs, 2014, 23(22):2659-63.*

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