Natural Products

ChemFaces

Isoimperatorin Datasheet

4th Edition (Revised in July, 2016)

[Product Information]

Name: Isoimperatorin

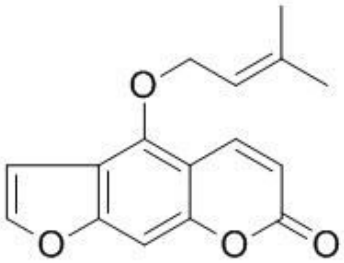
Catalog No.: CFN99107

Cas No.: 482-45-1

Purity: > 98%

M.F: $C_{16}H_{14}O_4$

M.W: 270.28



Physical Description: Yellow cryst.

Synonyms: 4-(3-methylbut-2-enoxy)-7-furo[3,2-g][1]benzopyranone.

[Intended Use]

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

[Source]

The root of *Peucedanum ostruthium L.*

[Biological Activity or Inhibitors]

Isoimperatorin is a medicinal herbal product that is isolated from the dried roots of Angelicae dahuricae, can inhibit the cyclooxygenase-2 (COX-2) and COX-1-dependent phases of prostaglandin D2 (PGD2) generation in bone marrow-derived mast cells (BMMC) in a concentration-dependent manner, with IC 50 values of 10.7 uM and 24 uM, respectively; it may provide the basis for novel anti-inflammatory drugs.[1]

Isoimperatorin possesses a potent hepatoprotective effect against AFB1, presumably through the induction of GSTalpha and the direct inhibition of CYP1A at 2 microM concentration , and suggests that it should be considered a potential chemopreventive.[2]

Isoimperatorin isolated from Cimicifugae Rhizome selectively inhibits TNF- α -induced expression of VCAM-1 at least by upregulation of PPAR- γ , and signals for ERK1/2, PI3K, and PKC are involved in this effect.[3]

Isoimperatorin (IO) has antimycobacterial activity against Mycobacterium tuberculosis strain H37Rv (ATCC 27294), IO has antimycobacterial activity against 2 drug-sensitive and 6 drug-resistant isolates, with minimum inhibitory concentrations (MICs) of 50-100 ug ml(-1) and 100-200 ug ml(-1), respectively; and IO exhibits synergistic antimycobacterial effects with rifampin (RMP),isoniazid (INH) and ethambutol (EMB) against 6 drug-resistant strains, with fractional inhibitory concentration index (FICI) values of 0.133－0.472, 0.123－0.475 and 0.124－0.25, respectively.[4]

[Solvent]

Chloroform, Dichloromethane, DMSO, Acetone, etc.

[HPLC Method][5]

Mobile phase: Methanol- H2O, gradient elution ;

Flow rate: 1.0 ml/min;

Column temperature: Room Temperature;

The wave length of determination: 249 nm.

[Storage]

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

[References]

[1] Moon T, Jin M, Son J, *et al. Arch. Pharm. Res., 2008, 31(2):210-5.*

[2] Pokharel Y R, Han E H, Kim J Y, *et al. Carcinogenesis, 2006, 27(12):2483-90.*

[3] Lidiya Moon, Yu Mi Ha, Hwa Jin Jang,*et al. J. Ethnopharmacol., 2011, 133(2):336-44.*

[4] Guo N, Wu J., Fan J, *et al. Lett. Appl. Microbiol., 2014, 58(4):344-9.*

[5] Chen Y, Jin Y C, Chen Y F, *et al. J. Liq. Chromatogr .R. T., 2009, 32(16):2384-95.*

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