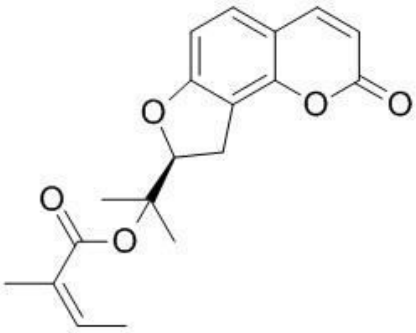
Natural Products

ChemFaces

Columbianadin Datasheet

4th Edition (Revised in July, 2016)

[Product Information]



Name: Columbianadin

Catalog No.: CFN99785

Cas No.: 5058-13-9

Purity: > 98%

M.F: $C_{19}H_{20}O_5$

M.W: 328.36

Physical Description: White cryst..

Synonyms: (Z)-2-methyl-2-butenoic acid 2-[(8S)-2-oxo-8,9-dihydrofuro[2,3-h][1]benzopyran-8-yl]propan-2-yl ester; Zosimin; Columbianin.

[Intended Use]

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

[Source]

The herbs of *Angelicae pubescens.*

[Biological Activity or Inhibitors]

Columbianadin (CBN) is a coumarin-type compound and one of the main bioactive constituents of the underground part of Angelica pubescens Maxim. f. biserrata Shan et Yuan, has analgesic, anti-inflammatory, calcium-channel blocking, and platelet aggregation inhibiting functions.[1]

Columbianadin has calcium-channel blocking function, can inhibit depolarization induced Ca^{2+} uptake in rat pituitary GH3 cells.[2]

Columbianadin has anti-inflammatory activity, has inhibition of airway inflammation, it possesses strong inhibitory activity against the inflammatory response of IL-1β-treated A549 cells and LPS-treated MH-S cells.[3,4]

Columbianadin can effectively suppress the growth of colon cancer cells, low concentration (up to 25 μM) of CBN induces apoptosis, and high concentration (50 μM) of CBN induces necroptosis; the induction of apoptosis by CBN is correlated with the modulation of caspase-9, caspase-3, Bax, Bcl-2, Bim and Bid, and the induction of necroptosis is related with RIP-3, and caspase-8; demonstrates that CBN has the potential to be a candidate in the development of anti-cancer agent derived from natural products.[5]

[Solvent]

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

[HPLC Method][6]

Mobile phase: Methanol -H2O=85:15 ;

Flow rate: 1.0 ml/min;

Column temperature: Room Temperature;

The wave length of determination: 325 nm.

[Storage]

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

[References]

[1] Zhang Y B, Li W, Yang X W. *Phytochemistry, 2012, 81(1):109-16.*

[2] Törnquist K, Vuorela H. *Planta Med.., 1990, 56(1):127-9.*

[3] Lim H J, Ju H L, Choi J S, *et al. J. Ethnopharmacol., 2014, 155(2):1353-61.*

[4] Lee J H, Min D S, Lim H J, *et al. Planta Med., 2014,.80 - P2O53.*

[5] Kang Ji In, Hong J Y, Sue C J, *et al. Biomol. Ther., 2016, 24(3):320-7.*

[6] Zhang Y B, Yang X W. *Biomed. Chromatogr., 2010, 24(4):433–7.*

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