Natural Products

ChemFaces

Isobavachalcone Datasheet

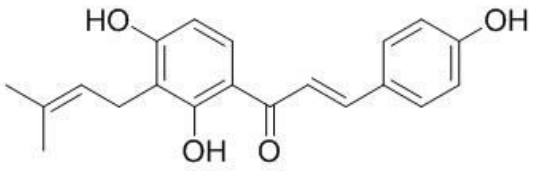
4th Edition (Revised in July, 2016)

[Product Information]

Name: Isobavachalcone

Catalog No.: CFN98593

Cas No.: 20784-50-3



Purity: >=98%

M.F: $C_{20}H_{20}O_4$

M.W: 324.37

Physical Description: Powder

Synonyms:(2E)-1-[2,4-Dihydroxy-3-(3-methylbut-2-en-1-yl)phenyl]-3-(4-hydroxyphenyl)prop-2-en-1-one.

[Intended Use]

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

[Source]

The fruits of *Psoralea corylifolia L.*

[Biological Activity or Inhibitors]

Isobavachalcone can induce apoptotic cell death in neuroblastoma via the mitochondrial pathway and has no cytotoxicity against normal cells, therefore, isobavachalcone may be applicable as an efficacious and safe drug for the treatment of neuroblastoma.[1]

Isobavachalcone can potently abrogate Akt signaling and exerts anti-proliferative effects on several human cancer cell lines; it significantly abates Akt phosphorylation at Ser-473 and Akt kinase activity in cells, which subsequently leads to inhibition of Akt downstream substrates and evokes significant levels of apoptosis associated with mitochondria pathway.[2]

Isobavachalcone exhibits intrinsic antibacterial activity against several Gram-negative bacteria, and its activities are significantly improved in the presence of an efflux pump inhibitor (MIC values decreased to below 10 microg/ml), indicates that isobavachalcone could be candidates for the development of new drugs against multidrug-resistant (MDR) strains and that its use in combination with efflux pump inhibitors reinforces its activity. [3]

Isobavachalcone may have suppressive effects against by melanin in the skin.[4]

Isobavachalcone can suppress inducible nitric oxide synthase (iNOS) expression induced by macrophage-activating lipopeptide 2-kDa, polyriboinosinic polyribocytidylic acid, or lipopolysaccharide; indicates the potential of isobavachalcone as a potent anti-inflammatory drug.[5]

Spontaneous aggregation of Aβ is a key factor in the development of Alzheimer's disease, isobavachalcone can significantly inhibit both oligomerization and fibrillization of Aβ42, whereas bavachinin inhibits fibrillization and leads to off-pathway aggregation, they attenuate Aβ42-induced toxicity in a SH-SY5Y cell model, these findings may provide valuable information for new drug development and Alzheimer's therapy in the future.[6]

Isobavachalcone, cycloartocarpesin and artocarpesin are potential cytotoxic natural products that deserve more investigations to develop novel antineoplastic drugs against multifactorial drug-resistant cancers.[7]

[Solvent]

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

[HPLC Method][8]

Mobile phase: Acetonitrile- 0.01 M Formic acid in water,gradient elution ;

Flow rate: 0.5 ml/min;

Column temperature: Room Temperature;

The wave length of determination: 246 nm.

[Storage]

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

[References]

[1] Nishimura R, Tabata K, Arakawa M, *et al. Biol. Pharm. Bull., 2007, 30(10):1878-83.*

[2] Jing H, Zhou X, Dong X, *et al. Cancer Lett., 2010, 294(2):167-77.*

[3] Kuete V, Ngameni B, Tangmouo J G, *et al. Antimicrob. Agents Ch. 2010, 54(5): 1749-52.*

[4] Ohno O, Watabe T, Nakamura K, *et al. Biosci. Biotech. Bioch., 2010, 74(7):1504-6.*

[5] Shin H J, Shon D H, Youn H S. *Int. Immunopharmacol., 2013, 15(1):38-41.*

[6] Choi J H, Rho M C, Lee S W, *et al. Arch. Pharm. Res., 2008, 31(11):1419-23.*

[7] Kuete V, Mbaveng A T, Zeino M, *et al. Phytomedicine, 2015, 22(12):1096-02.*

[8] Chen Q, Li Y, Chen Z. *J. Pharmaceut. Anal., 2012, 2(2):143-51.*

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