Natural Products

ChemFaces

Cardamonin Datasheet

4th Edition (Revised in July, 2016)

[Product Information]

Name: Cardamonin

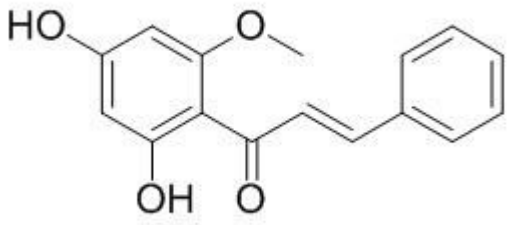
Catalog No.: CFN99890

Cas No.: 19309-14-9

Purity: > 98%

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

M.W: 270.28



Physical Description: Yellow powder

Synonyms: (E)-1-(2,4-Dihydroxy-6-methoxy-phenyl)-3-phenyl-; Alpinetin chalcone; Chalcone,2',4'-dihydroxy-6'-methoxy-;(2E)-1-(2,4-dihydroxy-6-methoxyphenyl)-3-phenylprop-2-en-1-one.

[Intended Use]

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

[Source]

The seeds of *Alpinia katsumadai Hayata.*

[Biological Activity or Inhibitors]

Cardamonin, a chalcone isolated from the fruits of a local plant Alpinia rafflesiana, has demonstrated anti-inflammatory activity in cellular models of inflammation, it is a potential anti-inflammatory drug lead that targets the NF-κB pathway.[1]

Cardamonin inhibits migration of several cancer cell lines expressing Tgase-2 via suppression of Tgase-2 expression and inhibition of Tgase-2 activity, it has Tgase-2 inhibitory activity will give us a new scaffold or clue of pharmacophore for the development of more effective Tgase-2 inhibitors.[2]

Cardamonin inhibits osteoclastogenesis induced by tumor cells through interruption of the signaling pathway activated by receptor activator of NF-κB ligand. [3]

Cardamonin has inhibitory effect on LPS-induced iNOS induction, the effect is not mediated via effects on the initial activation of the NFkappaB or MAP kinase pathways but is due to a direct effect on transcription factor binding to DNA.[4]

Cardamonin has vascular effects, it induces both endothelium-dependent and -independent relaxation; the former is likely mediated by nitric oxide whereas the latter is probably mediated through nonselective inhibition of Ca^{2+} influx and intracellular Ca^{2+} release and inhibition of the protein kinase C-dependent contractile mechanism.[5]

Cardamonin potentiates TNF-related apoptosis-inducing ligand (TRAIL)-induced apoptosis through ROS-CHOP-mediated up-regulation of DRs, decreased expression of decoy receptor and cell survival proteins, thus, cardamonin has the potential to make TRAIL more effective as an anticancer therapy.[6]

Cardamonin suppresses melanogenesis by inhibition of Wnt/β-catenin signaling, indicates that cardamonin may be a potential whitening agent for use in cosmetics and in the medical treatment of hyperpigmentation disorders.[7]

Cardamonin ameliorates insulin resistance induced by high insulin and high glucose through the mTOR and signal pathway, it inhibits the activity of the mammalian target of rapamycin and eliminates the negative feedback of the mammalian target of rapamycin and S6 kinase 1 on the insulin-signaling pathway.[8]

[Solvent]

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

[HPLC Method][9]

Mobile phase: Methanol - 1% Acetic acid H2O, gradient eiution;

Flow rate: 1.0 ml/min;

Column temperature: Room Temperature;

The wave length of determination: 346 nm.

[Storage]

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

[References]

[1] Israf D A, Khaizurin T A, Syahida A, *et al. Mol. Immun., 2007, 44(5):673-9.*

[2] Kyung P M, Seung Ho J, Hye Ja L, *et al. Life Sci., 2013, 92(2):154-60.*

[3] Yadav V R, Prasad S, Reuter S, *et al. Cancer Lett., 2011,12,17.*

[4] Hatziieremia S, Gray A I, Ferro V A, *et al. Brit. J.Pharmacol., 2006, 149(2):188-98.*

[5] Wang Z T, Lau C W, Chan F L, *et al.J.Cardiovasc. Pharm., 2001, 37(5):596-606.*

[6] Yadav V R, Sahdeo P, Aggarwal B B. *Brit. J. Pharmacol., 2012, 168(1):276–8.*

[7] Munju Cho, Minjung Ryu, Yongsu Jeong,*et al. Biochem. Bioph. Res.Co., 2009, 390(3):500-5.*

[8] Niu P, Zhang Y, Shi D, *et al. Planta Med., 2013, 79(6):452-8.*

[9] Zou Y L, Lv H T. *Chinese Tranditional Patent Medicine, 2011, 33 (1): 145-8.*

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