Natural Products

ChemFaces

Wedelolactone Datasheet

4th Edition (Revised in July, 2016)

[Product Information]

Name: Wedelolactone

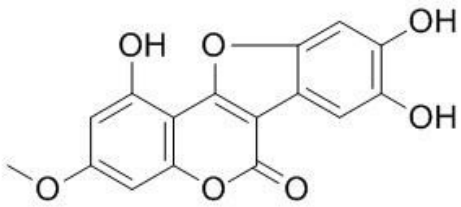
Catalog No.: CFN98857

Cas No.: 524-12-9

Purity: >95%

M.F: $C_{16}H_{10}O_7$

M.W: 314.25



Physical Description: Yellow powder

Synonyms: 1,8,9-Trihydroxy-3-methoxy-6H-benzofuro[3,2-c][1]benzopyran-6-one; 6H-Benzofuro(3,2-C)(1)benzopyran-6-one, 1,8,9-trihydroxy-3-methoxy-; 5,11,12-Trihydroxy-7-MethoxycouMestan.

[Intended Use]

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

[Source]

The herbs of *Eclipta prostrata.*

[Biological Activity or Inhibitors]

Wedelolactone, a natural compound that inhibits LPS-induced caspase-11 expression in cultured cells by inhibiting NF-kappaB-mediated transcription, it is an inhibitor of IKK, a kinase critical for activation of NF-kappaB by mediating phosphorylation and degradation of IkappaBalpha.[1]

Wedelolactone, para-bromophenacyl bromide and heparin are antagonists of these two phospholipase A2 myotoxins, and that antagonism by the first two compounds may be due to a more specific interaction with these proteins than that by the latter.[2]

Wedelolactone is a potent Î²-arrestin-biased G protein-coupled receptor-35 (GPR35) agonist, GPR35 has been shown to be a target of the asthma drugs cromolyn disodium and nedocromil sodium, suggests that certain anti-inflammatory phytochemicals including gallic acid and wedelolactone may modulate inflammatory allergic action via their agonism at GPR35, GPR35 may represent a target for the treatment of allergic disorders including asthma. [3]

Wedelolactone inhibits adipogenic differentiation through ERK pathway and suggest a novel inhibitory effect of wedelolactone on adipogenic differentiation in human adipose tissue-derived mesenchymal stem cells (hAMSCs).[4]

Wedelolactone selectivity induces caspase-dependent apoptosis in prostate cancer cells via a novel mechanism involving inhibition of PKCε without affecting Akt and suggest that it may emerge as a novel therapeutic agent against clinical prostate cancer in human.[5]

Wedelolactone exhibits anti-fibrotic effects, it can significantly inhibit the activation of LX-2 cells, the underlying mechanisms of which included inducing Bcl-2 family involved apoptosis, up-regulating phosphorylated status of ERK and JNK expressions, and inhibiting nuclear factor-κB (NF-κB) mediated activity, it may present as a useful tool for the prevention and treatment of hepatic fibrosis.[6]

Wedelolactone can inhibit breast cancer-mediated osteoclastogenesis, it inhibits the upregulation of osteoclasts stimulated by MDA62MB62231 breast cancer cells,regulates breast cancer-enhanced interaction of osteoblasts and osteoclasts by decreasing M-CSF expression in MDA62MB62231-stimulated osteoblasts; thus, suggests that wedelolactone

may be a potential natural agent for preventing and treating bone destruction in patients with bone metastasis due to breast cancer.[7]

[Solvent]

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

[HPLC Method][8]

Mobile phase: Methanol- 0.2% Formic acid in water=57:43;

Flow rate: 1.0 ml/min;

Column temperature: 30 ℃;

The wave length of determination: 351 nm.

[Storage]

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

[References]

[1] Kobori M, Yang Z, Gong D, *et al. Cell Death Differ., 2004, 11(1):123-30.*

[2] Melo P A, Ownby C L. *Toxicon Official Journal of the International Society on Toxinology, 1999, 37(1):199-215.*

[3] Deng H, Fang Y. *Pharmacology, 2012, 89(3-4):211-9.*

[4] Lim S, Jang H J, Park E H, *et al. J. Cell. Biochem., 2012, 113(11):3436-45.*

[5] Sarveswaran S, Gautam S C, Ghosh J. *Int. J. Oncol., 2012, 41(6):2191-9.*

[6] Xia Y, Chen J, Cao Y, *et al. Eur.J.Pharmacol., 2013, 714(1-3):105-11.*

[7] Hsieh C J, Kuo P L, Hou M F, *et al. Int. J.Oncol., 2015, 46(2):555-62.*

[8] Shailajan S, Menon S, Singh D, *et al. Pharmacogn. J., 2016, 8(2):132–9.*

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