Natural Products

ChemFaces

Columbamine Datasheet

4th Edition (Revised in July, 2016)

[Product Information]

Name: Columbamine

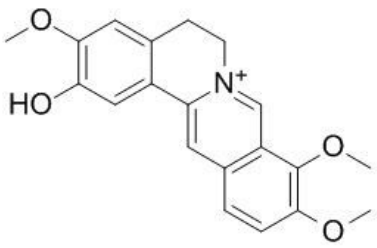
Catalog No.: CFN90581

Cas No.: 3621-36-1

Purity: >98%

M.F: $C_{20}H_{20}NO_4$

M.W: 338.38



Physical Description: Powder

Synonyms:5,6-Dihydro-2-hydroxy-3,9,10-trimethoxydibenzo[a,g]quinolizinium;Dehydroisocorypalmine.

[Intended Use]

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

[Source]

The roots of *Coptis chinensis Franch.*

[Biological Activity or Inhibitors]

Columbamine (COL), an active component of the herb Coptis chinensis, can inhibit the proliferation and neovascularization of metastatic osteosarcoma U2OS cells, COL inhibits U2OS cell-mediated neovascularization, which is accompanied by the down-regulation of matrix metalloproteinase (MMP) 2 expression and reduction of cell migration, adhesion, and invasion; taken together, COL exerts anti-proliferative and anti-vasculogenic effects on metastatic human osteosarcoma U2OS cells with low toxicity, these results warrant further investigation of COL as a potential anti-osteosarcoma and anti-cancer drug.[1]

Columbamine and jatrorrhizine are effective against against most of the fungi tested, e.g. Alternaria cajani, Bipolaris sp., Helminthosporium sp., Fusarium udum and Curvularia sp. .[2]

Columbamine shows high lipid-lowering activities through indirectly transactivating CYP7A1 by upregulating FTF and HNF-4α, and directly activating CYP7A1 catalytic activity by strongly interacting with receptor and ligand, therefore promoting cholesterol catabolism and accelerating the excretion of bile acids. [3]

Columbamine has anti-inflammatory activity, it can inhibit inflammations.[4]

Columbamine shows obvious glucose lowering activity, it has cytotoxicity in HepG2 cells within the test concentration.[5]

[Solvent]

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

[HPLC Method][6]

Mobile phase: 30 mM Ammonium bicarbonate water containing 0.7% ammonia solution and 0.1% triethylamine- Acetonitrile, gradient elution ;

Flow rate: 1.0 ml/min;

Column temperature: 35 ℃;

The wave length of determination: 275 nm.

[Storage]

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

[References]

[1] Bao M, Cao Z, Yu D, *et al. Toxicol.Lett., 2012, 215(3):174-80.*

[2] Amitabh Singh, Sarita Singh, Monisha Kesherwani, *et al. Arch. Phytopath. Plant Protect., 2010, 43(15):1450-3.*

[3] Yue Wang, Yulong Han, Fangni Chai, *et al. Fitoterapia.*

[4] Küpeli E, Koşar M, Yeşilada E, *et al. Life Sci., 2002, 72(6):645-57.*

[5] Chen H Y, Ye X L, Cui X L, *et al. Fitoterapia, 2012, 83(1):67-73.*

[6] Huang P, Qian X, Li J, *et al. J.Chromatogr.Sci., 2015, 53(1):73-8.*

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