Natural Products

ChemFaces

Liriodendrin Datasheet

4th Edition (Revised in July, 2016)

[Product Information]

Name: Liriodendrin

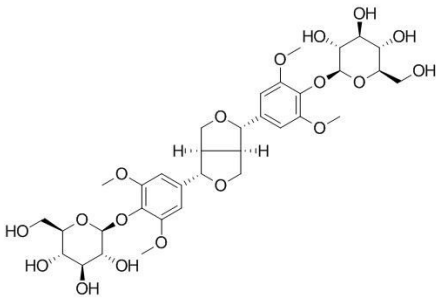
Catalog No.: CFN98964

Cas No.: 573-44-4

Purity: >95%

M.F: $C_{34}H_{46}O_{18}$

M.W: 742.7



Physical Description: Powder

Synonyms:(+)-Syringaresinol-di-O-β-D-glucoside;(1S,3aβ,6aβ)-1β,4β-Bis[4-(β-D-glucopyranosyloxy)-3,5-dimethoxyphenyl]tetrahydro-1H,3H-furo[3,4-c]furan;[[(3S)-3aα,4,6,6aα-Tetrahydro-1H,3H-furo[3,4-c]furan]-3α,6α-diyl]bis(2,6-dimethoxy-4,1-phenylene)bis(β-D-glucopyranoside).

[Intended Use]

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

[Source]

The herbs of *Linaria vulgaris*.

[Biological Activity or Inhibitors]

Liriodendrin, isolated by activity-guided fractionation from the ethyl acetate extracts of the stem bark of Acanthopanax senticosus, has anti-inflammatory and antinociceptive activities; it (5, 10 mg/kg/day, p. o.) significantly inhibits the increase of vascular permeability induced by acetic acid in mice and reduced an acute paw edema induced by carrageenan in rats; it shows analgesic activity in a dose-dependent inhibition in animal models.[1]

Liriodendrin has protective effects on dopamine-induced cytotoxicity via its anti-oxidative properties by reducing ROS level and anti-apoptotic effect via protection of mitochondrion membrane potential (ΔΨm), the effect of liriodendrin may involve the P53 pathway in apoptosis, suggests that it may provide a useful therapeutic strategy for the treatment of neurodegenerative diseases such as Parkinson's disease (PD).[2]

Liriodendrin may be a potent suppressor of $CaCl_{(2)}$-induced arrhythmias, the prophylactic administration of liriodendrin is effective in prolonging latency of arrhythmia and reducing the occurrence of ventricular fibrillation from 75% to 25%, the antiarrhythmic effect of liriodendrin (5.0 mg/kg) is similar to that of verapamil (1.05 mg/kg). [3]

Liriodendrin has inhibitory activities on gastritis and gastric ulcer, it can inhibit colonization of Helicobacter pylori effectively, it could be utilized for the treatment and/or protection of gastritis and gastric ulcer.[4]

Liriodendrin regulates lung inflammation, the phosphorylation of the NF-kB (p65) and expression of vascular endothelial growth factor (VEGF), liriodendrin treatment significantly improved the survival rate of mice with cecal ligation and puncture (CLP)-induced sepsis, liriodendrin prevents the generation of reactive oxygen species (ROS) by upregulating the expression of SIRT1 in RAW 264.7 cells, suggests that liriodendrin plays protective role in sepsis-induced acute lung injury.[5]

Liriodendrin is thought to be found firstly in this plant,and the fraction extracted from Kalopanax septemlobus(Thunb.) Koidz.in Guangxi showes an excellent hypoglycemic activity.[6]

[Solvent]

Pyridine, Methanol, Ethanol, etc.

[HPLC Method][7]

Mobile phase: 0.1% Phosphoric acid in water-0.1% Phosphoric acid in acetonitrile, gradient elution ;

Flow rate: 1.0 ml/min;

Column temperature: Room Temperature;

The wave length of determination: 230 nm.

[Storage]

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

[References]

[1] Jung H J, Park H J, Kim R G, *et al. Planta Med., 2003, 69(7):610-6.*

[2] Zhao D L, Shen D W, Chi Y T, *et al.Journal of Chinese Pharmaceutical Sciences, 2007, 16(4):294-9.*

[3] Feng C, Li B G, Gao X P, *et al. Arch. Pharm. Res., 2010, 33(12):1927-32.*

[4] Sohn Y A, Hwang S A, Sun Y L, *et al. Biomol. Ther., 2015, 23(1):53-9.*

[5] Yang L, Li D, Zhuo Y, *et al. Inflammation, 2016:1-9.*

[6] Yue Y, Tang Z, Wei Y, *et al. Medical Journal of Wuhan University, 2008, 29(6):759-62.*

[7] Zhao B T, Jeong S Y, Kim T I, *et al. Arch. Pharm. Res., 2015, 38(12):2183-92.*

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