Natural Products

ChemFaces

Echinacoside Datasheet

4th Edition (Revised in July, 2016)

[Product Information]

Name: Echinacoside

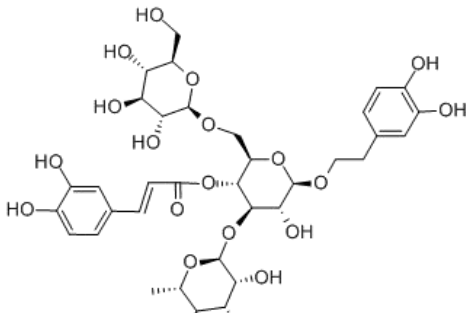
Catalog No.: CFN98105

Cas No.: 82854-37-3

Purity: >=98%

M.F: $C_{35}H_{46}O_{20}$

M.W: 786.72



Physical Description: Powder

Synonyms:

beta-D-glucopyranoside,2-(3,4-dihydroxyphenyl)ethyl-O-6-deoxy-alpha-L-mannopyranosyl-(1→3)-O-[beta-D-glucopyranosyl-(1→6)]-4-O-[(2E)-3-(3,4-dihydroxyphenyl)-1-oxo-2-propen-1-yl]-;

2-(3,4-dihydroxyphenyl)ethyl-6-deoxy-alpha-L-mannopyranosyl-(1→3)-[beta-D-glucopyranosyl-(1→6)]-4-O-[(2E)-3-(3,4-dihydroxyphenyl)prop-2-enoyl]-beta-D-glucopyranoside.

[Intended Use]

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

[Source]

The rhizomes of *Cistanche tubulosa (Schenk) Wight.*

[Biological Activity or Inhibitors]

Echinacoside, one of the phenylethanoids isolated from the stems of Cistanches salsa, it can trigger cells in the G1 phase to enter the S phase and G2 phase, and can improve ROS degradation, it can protect cells from DNA damage, suggest that echinacoside has potential anti-senescence activity.[1]

Echinacoside can improve the hematopoietic function of bone marrow in 5-FU-induced myelosuppression mice, it can be considered as an alternative effective therapy for patients during chemotherapy or HSC transplantation.[2]

Echinacoside inhibits cytochrome c release and caspase-3 activation caused by ensuing rotenone exposure via activating Trk-extracellular signal-regulated kinase (ERK) pathway in neuronal cells; echinacoside is able to cross the blood–brain barrier freely, it may have a promising potential in neurodegenerative diseases treatment. [3]

Suppression of nitric oxide implicated in the protective effect of echinacoside on H2O2-induced PC12 cell injury.[4]

Echinacoside for 12 weeks can effectively and safely prevent vehicle (OVX)-induced osteoporosis in rats via increasing the osteoprotegerin (OPG)/receptor activator of nuclear factor-κB ligand (RANKL) ratio.[5]

Echinacoside inhibits amyloid fibrillization of HEWL and protects against Aβ-induced neurotoxicity.[6]

Echinacoside ameliorates D-galactosamine plus lipopolysaccharide-induced acute liver injury in mice via inhibition of apoptosis and inflammation.[7]

Echinacoside can inhibit hypoxia-induced proliferation of PASMCs, which is associated with of PASMCs and improvement of hypoxia, it may be a potential agent for prevention and treatment of hypoxia-induced .[8]

Echinacoside induces apoptotic cancer cell death by inhibiting the nucleotide pool sanitizing enzyme MTH1.[9]

[Solvent]

Pyridine, Methanol, Ethanol, etc.

[HPLC Method][10]

Mobile phase: Acetonitrile – 0.5% Acetic acid =15.5:84.5 ;

Flow rate: 1.0 ml/min;

Column temperature: Room Temperature;

The wave length of determination: 330 nm.

[Storage]

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

[References]

[1] Hong X, Hui Z, Cong C, *et al. Pharmazie, 2009, 64(11):752-4.*

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[3] Zhu M, Lu C, Li W. *J. Neurochem., 2013, 124(4):571–80.*

[4] Kuang R, Sun Y, Zheng X. *Nat. Prod. Co., 2010, 5(4):571-4.*

[5] Yang X, Li F, Yang Y, *et al. Evid.Based Compl. Alt. , 2013, 2013(4):926928.*

[6] Di Z, Hua L, Wang J B. *Int.J. Biol. Macromol., 2014, 72:243–53.*

[7] Li X, Gou C, Yang H, *et al. Scand. J. Gastroentero., 2014, 49(8):993-1000.*

[8] Gai X Y, Tang F, Ma J, *et al. J. Pharmacol. Sci., 2014, 126(2):155-63.*

[9] Dong L, Wang H, Niu J, *et al. Oncotargets Ther. 2015, 8:3649-64.*

[10] Jia C, Shi H, Wu X, *et al. J. Chromatogr. B, 2006, 844(844):308-13.*

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