Natural Products

ChemFaces

Gastrodin Datasheet

4th Edition (Revised in July, 2016)

[Product Information]

Name: Gastrodin

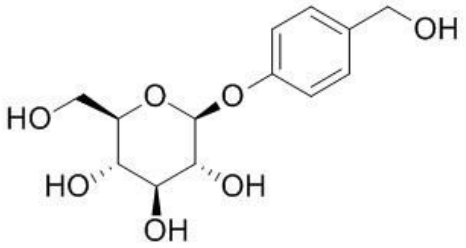
Catalog No.: CFN99549

Cas No.: 62499-27-8

Purity: > 98%

M.F: $C_{13}H_{18}O_7$

M.W: 286.28



Physical Description: White cryst.

Synonyms:(2R,3S,4S,5R,6S)-2-(hydroxymethyl)-6-[4-(hydroxymethyl)phenoxy]oxane-3,4,5-triol;4-(beta-D-glucopyranosyloxy) benzyl alcohol.

[Intended Use]

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

[Source]

The herb of *Gastrodia elata BL.*

[Biological Activity or Inhibitors]

Gastrodin has anti-inflammatory activity, can significantly attenuate levels of neurotoxic proinflammatory mediators and proinflammatory cytokines by inhibition of the NF-κB signaling pathway and phosphorylation of MAPKs in LPS-stimulated microglial cells, suggests that gastrodin has a potential as an anti-inflammatory drug candidate in neurodegenerative diseases.[1]

Gastrodin protects midbrain of MPTP-intoxicated mice against oxidative stress, in part, through interrupting ERK1/2–Nrf2 pathway mechanism, which will give us an insight into the potential of gastrodin in terms of opening up new therapeutic avenues for PD.[2]

Gastrodin is one of the natural compound isolated from Gastrodia elata and has anticonvulsant effects, it may cause the elevation of GABA concentration by inhibiting the GABA shunt.[3]

Gastrodin activates PI3-K/Akt signaling and that inhibition of this pathway reverses the inhibitory effects of gastrodin on NF-κB and MAPKs activation in H9c2 cardiomyocytes.[4]

Gastrodin can inhibit allodynia and hyperalgesia in painful diabetic neuropathy rats by decreasing excitability of nociceptive primary sensory neurons.[5]

Gastrodin has protective effect to the prevention of neurotoxicity induced by ischemic stroke, the mechanism is by improving anti-oxidant and anti-inflammation activities, inhibiting apoptosis pathway, and increasing Akt phosphorylation and Nrf2 expression.[6]

[Solvent]

Pyridine, DMSO, Methanol, Hot water, etc.

[HPLC Method][7]

Mobile phase: Methanol- 0.1% Phosphoric acid H2O=2:98;

Flow rate: 0.8 ml/min;

Column temperature: 25 ℃;

The wave length of determination: 220 nm.

[Storage]

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

[References]

[1] Dai J N, Zong Y, Zhong L M, *et al. Plos One, 2011, 6(7):e21891.*

[2] Wang X L, Xing G H, Hong B, *et al. Life Sci., 2014, 114(2):77-85.*

[3] An S J, Park S K, Hwang I K, *et al. J. Neurosci. Res., 2003, 71(4):534-43.*

[4] Yang P, Han Y, Gui L, *et al. Biochem. Pharmacol., 2013, 85(8):1124-33*.

[5] Sun W, Miao B, Wang X C, *et al. Plos One, 2012, 7(6):e39647.*

[6] Peng Z, Wang S, Chen G, *et al. Neurochem. Res., 2015, 40(4):661-73.*

[7] Ju X H, Shi Y, Liu N, *et al. J. Chromatogr. B , 2010, 878(22):1982-6.*

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