

Harpagoside Datasheet

4th Edition (Revised in July, 2016)

[Product Information]

Name: Harpagoside

Catalog No.: CFN98147

Cas No.: 19210-12-9

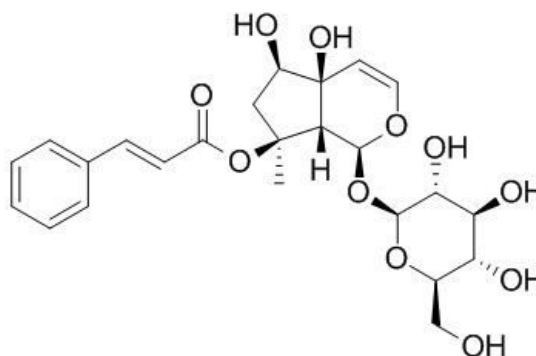
Purity: > 98%

M.F: C₂₄H₃₀O₁₁

M.W: 494.49

Physical Description: White cryst.

Synonyms: (E)-3-phenyl-2-propenoic-acid[(1S,4aS,5R,7S,7aS)-4a,5-dihydroxy-7-methyl-1-[[[(2S,3R,4S,5S,6R)-3,4,5-trihydroxy-6-(hydroxymethyl)-2-oxanyl]oxy]-1,5,6,7a-tetrahydrocyclopenta[c]pyran-7-yl] ester.



[Intended Use]

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

[Source]

The roots of *Scrophularia ningpoensis* Hemsl.

[Biological Activity or Inhibitors]

Harpagoside (HAR) is a natural compound isolated from *Harpagophytum procumbens* (devil's claw) that is reported to have anti-inflammatory effects; HAR blocks lipopolysaccharide (LPS)-induced bone loss in an inflammatory osteoporosis model, and it does not prevent ovariectomy-mediated bone erosion in a postmenopausal osteoporosis model; suggests that HAR is a valuable agent against inflammation-related bone disorders but not osteoporosis induced by hormonal abnormalities.^[1]

Harpagoside dose-dependently inhibits LPS-stimulated NF-kappaB promoter activity in a gene reporter assay in RAW 264.7 cells, it suppresses lipopolysaccharide-induced iNOS and COX-2 expression through inhibition of NF-kB activation.^[2]

Harpagoside can significantly inhibit TNF- α -induced mRNA synthesis and protein production of the atherogenic adipokines including IL-6, PAI-1, and MCP-1, suggests that the clinical application of medicinal plants which contain harpagoside may lead to a partial prevention of obesity-induced atherosclerosis by attenuating inflammatory responses.^[3]

Harpagoside attenuates the MPTP/MPP + induced dopaminergic neurodegeneration and movement disorder mainly through elevating glial cell line-derived neurotrophic factor.^[4]

Harpagoside exerts neuroprotection effect and ameliorates learning and memory deficit appears to be associated, at least in part, with up-regulation of brain-derived neurotrophic factor (BDNF) content as well as activating its downstream signaling pathways, e.g., MAPK/PI3K pathways; it raises the possibility that HAR has potential to be a therapeutic agent against Alzheimer's disease (AD).^[5]

[Solvent]

Pyridine, Methanol, Ethanol, Hot water, etc.

[HPLC Method]^[6]

Mobile phase: Methanol -H₂O=50:50 ;

Flow rate: 1.5 ml/min;

Column temperature: Room Temperature;

The wave length of determination: 278 nm.

[Storage]

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

[References]

- [1] Kim JY, Park SH, Baek JM, *et al. J. Nat. Prod.*, 2015, 78(9):2167-74.
- [2] Huang H W, Tran V H, Duke R K, *et al. J. Ethnopharmacol.*, 2006, 104(1-2):149-55.
- [3] Kim T K, Park K S. *Cytokine*, 2015, 76(2):368-74.
- [4] X Y Sun , Zhong K X , Zhang Y, *et al. J. Neurochem.*, 2011, 120(6):1072-83.
- [5] J. Li, X. Ding, R. Zhang, *et al. Neuroscience*, 2015, 303:103-14.
- [6] Babili F E, Fouraste I, Rougaignon C, *et al. Pharmacogn. Mag.*, 2012, 8(30):175-80.

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