Natural Products

ChemFaces

Ginsenoside Rg5 Datasheet

4th Edition (Revised in July, 2016)

[Product Information]

Name: Ginsenoside Rg5

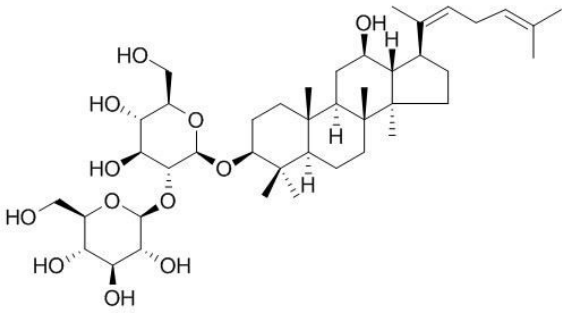
Catalog No.: CFN92643

Cas No.: 186763-78-0

Purity: > 98%

M.F: $C_{42}H_{70}O_{12}$

M.W: 767.0



Physical Description: Powder

Synonyms:

(2S,3R,4S,5S,6R)-2-[[(2R,3R,4S,5S,6R)-4,5-dihydroxy-6-(hydroxymethyl)-2-[[(10R,12S,14R,17S)-12-hydroxy-4,4,7,10,14-pentamethyl-17-[(2E)-6-methylhepta-2,5-dien-2-yl]-1,2,3,5,6,7,8,9,11,12,13,15,16,17-tetradecahydrocyclopenta[a]phenanthren-3-yl]oxy]-3-oxany.

[Intended Use]

1. Reference standards;
2. Pharmacological research;
3. Food research;
4. Cosmetic research;
5. Synthetic precursor compounds;
6. Intermediates & Fine Chemicals;
7. Ingredient in supplements, beverages;
8. Others.

[Source]

The roots of *Panax ginseng*.

[Biological Activity or Inhibitors]

Ginsenoside-Rg5 (G-Rg5), a newly discovered diol-containing ginsenoside, G-Rg5 blocks cell cycle of SK-HEP-1 cells at the Gl/S transition phase by down-regulating cyclin E-dependent kinase activity and that the down-regulation of cyclin E-dependent kinase activity is caused mainly by induced CDK2 inhibitor, p21Cip/WAF1 and decreased levels of cyclin E.[1]

Ginsenosides Rg5 and its metabolite ginsenoside Rh3 suppress swelling of oxazolone-induced mouse ear contact dermatitis, they also reduce mRNA expressions of cyclooxygenase-2, interleukin (IL)-1β, tumor necrosis factor (TNF)-α and interferon (IFN)-γ; the inhibition of ginsenoside Rh3 is more potent than that of ginsenoside Rg5; suggests that ginsenoside Rh3 metabolized from ginsenoside Rg5 may improve chronic dermatitis or psoriasis by the regulation of IL-1β and TNF-α produced by macrophage cells and of IFN-γ produced by Th cells.[2]

Ginsenoside Rg5 plays a novel role as an insulin-like growth factor-1 receptor , it promotes therapeutic and improves without adverse effects in the vasculature.[3]

Ginsenoside Rg5 ameliorates lung inflammation in mice by inhibiting the binding of LPS to toll-like receptor-4 on macrophages.[4]

Ginsenoside Rg5 improves cognitive dysfunction and beta-amyloid deposition in STZ-induced memory impaired rats via attenuating neuroinflammatory responses, suggests that Rg5 could be a beneficial agent for the treatment of Alzheimer's disease (AD). [5]

Ginsenoside-Rg5 induces apoptosis and DNA damage in human cervical cancer cells , it has marked genotoxic effects in the HeLa and MS751 cells and, thus, demonstrates potential as a genotoxic or cytotoxic drug for the treatment of cervical cancer.[6]

Ginsenoside Rg5 may be metabolized in vivo to ginsenoside Rh3 by human intestinal

microflora, and ginsenoside Rh3 may improve antiallergic diseases, such as rhinitis and dermatitis.[7]

Ginsenoside Rg5 has anti-inflammatory effect, it suppresses ROS production with upregulation of hemeoxygenase-1 (HO-1) expression in lipopolysaccharide-stimulated BV2 cells, it may provide a therapeutic potential for various neuroinflammatory disorders.[8]

[Solvent]

Pyridine, Methanol, Ethanol, etc.

[HPLC Method][9]

HPLC-ELSD:

Mobile phase: 10% acetonitrile aqueous solution containing 5% acetic acid- 80% acetonitrile aqueous solution water,gradient eiution;

Flow rate: 1.2 ml/min;

Column temperature: 30 ℃;

Drift tube temperature: 60 ℃;

Flow rate of gas : 1.8L/min;

Carrier gas: N_2.

[Storage]

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

[References]

[1] Lee K Y, Lee Y H, Kim S I, *et al. Anticancer Res., 1997, 17(2A):1067-72.*

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[3] Cho Y L, Hur S M, Kim J Y, *et al. J. Biol.Chem., 2015, 290(1):467-77.*

[4] Kim T W, Joh E H, Kim B, *et al. Int. Immunopharmacol., 2012, 12(1):110-6.*

[5] Chu S, Gu J, Feng L, *et al. Int. Immunopharmacol., 2014, 19(2):317-26.*

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[8] Young L Y, Jin S P, Jin J S , *et al. Int .J. Mol. Sci., 2013, 14(5):9820-33.*

[9] Sun B S, Ye G Y, Zhang C C. *Chinese Journal of Pharmaceutical Analysis, 2013(3): 388-94.*

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