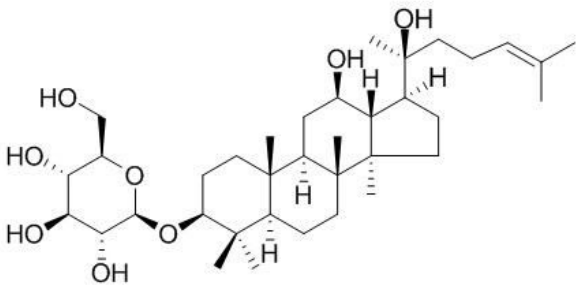
Natural Products

ChemFaces

Ginsenoside Rh2 Datasheet

4th Edition (Revised in July, 2016)

[Product Information]



Name: Ginsenoside Rh2

Catalog No.: CFN99971

Cas No.: 78214-33-2

Purity: > 98%

M.F: $C_{36}H_{62}O_8$

M.W: 622.87

Physical Description: White powder

Synonyms:(2R,3R,4S,5S,6R)-2-[[(3S,5R,8R,9R,10R,12R,13R,14R,17S)-12-hydroxy-17-[(2S)-2-hydroxy-6-methylhept-5-en-2-yl]-4,4,8,10,14-pentamethyl-2,3,5,6,7,9,11,12,13,15,16,17-dodecahydro-1H-cyclopenta[a]phenanthren-3-yl]oxy]-6-(hydroxymethyl)oxane-3,4,5-triol.

[Intended Use]

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

[Source]

The roots of *Panax ginseng C. A. Mey.*

[Biological Activity or Inhibitors]

Ginsenoside Rh2 is one of the most active components of red ginseng, controlling cancer and other metabolic diseases including osteoclast differentiation; ginsenoside Rh2 can suppress RANKL-induced osteoclast differentiation in vitro and in vivo through the regulation of c-Fos and NFATc1 expressions, not excluding the involvement of NF-κB and ERK, it is also suggested to be developed as a therapeutic drug for prevention and treatment of osteoporosis.[1]

Ginsenoside Rh2 has antitumor, antidiabetic, antiallergic, and anti-inflammatory effects; however, the extremely poor oral bioavailability induced by its low water solubility greatly limits the potency of Rh2 in clinical use, the sulfated modification of Rh2 improved its water solubility and the sulfated derivatives could be more potential candidates for developing as anti-inflammatory agents.[2]

Ginsenoside Rh2 potently protects ischemia-reperfusion brain injury, also inhibits prostaglandin-E_2 synthesis in lipopolysaccharide-stimulated RAW264.7 cells, suggests it can improve ischemic brain injury.[3]

Ginsenoside Rh2 potently reverses memory impairment caused by scopolamine, it may improve learning deficits, also have the memory-enhancing effects of RGB.[4]

Ginsenoside Rh2 can suppress growth of uterine leiomyoma in vitro and in vivo and may regulate ERα/c-Src/p38 MAPK activity.[5]

Ginsenoside Rh2 can inhibit the tendency of apoptosis, and reverse the impaired β-cell growth potential by modulating Akt/Foxo1/PDX-1 signaling pathway and regulating cell cycle proteins, suggests its therapeutic potential in the treatment of diabetes.[6]

[Solvent]

Pyridine, Methanol, Ethanol, Hot water, etc.

[HPLC Method][7]

Mobile phase: 0.005 M KH2PO4(pH 7.2)- Acetonitrile-Methanol=23:7:70 ;

Flow rate: 0.5 ml/min;

Column temperature: Room Temperature;

The wave length of determination: 203 nm.

[Storage]

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

[References]

[1] Long He, Junwon Lee, Jae Hyuk Jang,*et al. Bone, 2012, 50(6):1207-13.*

[2] Fu B D, Bi W Y, He C L, *et al. Fitoterapia, 2013, 84(3):303-7.*

[3] Park E K, Choo M K, Oh J K, *et al. Biol. Pharm. Bull., 2004, 27(3):433-6.*

[4] Yang J H, Han S J, Ryu J H, *et al. Biol. Pharm. Bull., 2009, 32(10):1710-5.*

[5] Zhu Y, Xu J, Li Z, *et al. J. Funct. Foods, 2015, 18:73-82.*

[6] Wang Y, Wang H, Liu Y, *et al. Horm. Metab. Res., 2012, 44(1):33-40.*

[7] Li H, Li P Y, Yong P. *Natural Products Chemistry & Research, 2014, 1(1):1-5.*

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