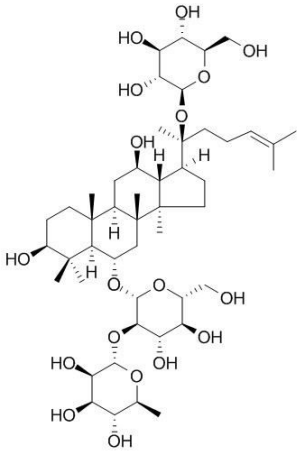
Natural Products

ChemFaces

Ginsenoside Re Datasheet

4th Edition (Revised in July, 2016)

[Product Information]



Name: Ginsenoside Re

Catalog No.: CFN99974

Cas No.: 51542-56-4

Purity: > 98%

M.F: $C_{48}H_{82}O_{18}$

M.W: 947.15

Physical Description: White powder

Synonyms:2-[[2-[[3,12-dihydroxy-4,4,8,10,14-pentamethyl-17-[6-methyl-2-[[3,4,5-trihydroxy-6-(hydroxymethyl)-2-oxanyl]oxy]hept-5-en-2-yl]-2,3,5,6,7,9,11,12,13,15,16,17-dodecahydro-1H-cyclopenta[a]phenanthren-6-yl]oxy]-4,5-dihydroxy-6-(hydroxymethyl)-3-oxanyl]oxy]-6.

[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 Re, a main phytosterol of Panax ginseng, inhibits Ca^{2+} accumulation in mitochondria during cardiac ischemia/reperfusion, which is attributable to nitric oxide (NO)-induced Ca^{2+} channel inhibition and K^+ channel activation in cardiac myocytes, acts as a specific agonist for the nongenomic pathway of sex steroid receptors, and NO released from activated eNOS underlies cardiac K^+ channel activation and protection against ischemia-reperfusion injury, G-Re also exerts antiischemic effect and induces angiogenic regeneration.[1,2]

Ginsenoside Re has anti-diabetic and anti-hyperlipidemic activities ,can improve hyperglycemia and hyperlipidemia through activation of AMPK, and confer beneficial effects on type 2 diabetic patients with insulin resistance and dyslipidemia. [3]

Ginsenoside Re can improve the cognition of streptozotocin-induced diabetic rats,the mechanism is by its anti-inflammation and antioxidation; glycemic control benefits the attenuation of diabetes-associated cognitive decline.[4]

Ginsenoside Re can hyperpolarize HCAECs,and this effect can be reversed by apamin, suggests ginsenoside Re increases HCAEC outward current via SKCa channel activation, and NSC channel is not involved.[5]

Ginsenoside Re increases the proliferation of $CD4^+$ T cells with decreases cell death, and enhances viability of $CD4^+$T cells through the regulation of IFN-γ-dependent autophagy activity.[6]

Ginsenoside Re exhibits potent neuroprotective effects against neuroinflammation in a murine model of ALS, ginsenoside Re treatment can reduce the loss of motor neurons and active-microglia-related expression of Iba-1 in the spinal cord of symptom.[7]

[Solvent]

Pyridine, Methanol, Ethanol, Hot water, etc.

[HPLC Method][8]

Mobile phase: Acetonitrile-1% Phosphoric acid H2O=20:80 ;

Flow rate: 1.0 ml/min;

Column temperature: 30 ℃;

The wave length of determination: 203 nm.

[Storage]

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

[References]

[1] Furukawa T, Bai C X, Kaihara A, *et al. Mol. Pharmacol., 2006, 70(6):1916-24.*

[2] Peng L, Sun S, Xie L H, *et al. Cardiovasc Ther. , 2012, 30(4):e183–8.*

[3] Quan H Y, Yuan H D, Jung M S, *et al. Int. J. Mol. Med., 2012, 29(1):73-80.*

[4] Liu Y W, Zhu X, Li W, *et al. Pharmacol. Biochem., 2012, 101(1):93-8.*

[5] Sukrittanon S, Watanapa W B, Ruamyod K. *Life Sci., 2014, 115(1-2):15-21.*

[6] Son Y M, Kwak C W, Lee Y J, *et al. Int. Immunopharmacol., 2010, 10(5):626-31.*

[7] Cai M, Yang E J. *Am. J. Chinese Med., 2016, 44(2):401-13.*

[8] Huang X, Liang T. *Chinese Medicine Modern Distance Education of China,2011, 09(21):131-2.*

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