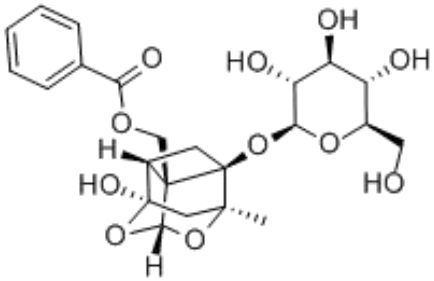
Natural Products

ChemFaces

Paeoniflorin Datasheet

4th Edition (Revised in July, 2016)

[Product Information]



Name: Paeoniflorin

Catalog No.: CFN99544

Cas No.: 23180-57-6

Purity: > 98%

M.F: $C_{23}H_{28}O_{11}$

M.W: 480.45

Physical Description: Powder

Synonyms:5beta-[(Benzoyloxy)methyl]tetrahydro-5-hydroxy-2-methyl-2,5-methano-1H-3,4-dioxacyclobuta[cd]pentalen-1alpha(2H)-yl-beta-D-glucopyranoside.

[Intended Use]

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

[Source]

The roots of *Paeonia lactiflora Pall.*

[Biological Activity or Inhibitors]

Paeoniflorin (PF), a major constituent of peony root, was proved to be neuroprotective in middle cerebral artery occlusion model, it can attenuate cognitive deficit and brain damage induced by chronic cerebral hypoperfusion and that suppression of neuroinflammatory reaction in brain might be involved in PF-induced neuroprotection;PF has neuroprotective effect on cerebral ischemic rat by activating adenosine A1 receptor in a manner different from its classical agonists, it may have the potential therapeutic value as an anti-stroke drug.[1,2]

Paeoniflorin can attenuate neuroinflammation and dopaminergic neurodegeneration in the MPTP model of Parkinson's disease by activation of adenosine A1 receptor.[3]

Paeoniflorin can suppress NF-κB activation through modulation of IκBα and enhances 5-fluorouracil-induced apoptosis in human gastric carcinoma cells.[4]

Paeoniflorin protects thymocytes against irradiation-induced cell damage by scavenging ROS and attenuating the activation of the mitogen-activated protein kinases.[5]

Paeoniflorin has anti-inflammatory and immunoregulatory effects, it may induce the cells immune tolerance, which then shift to Th2, Th3 cells mediated activities to take effect the anti-inflammatory and immunoregulatory effects, the mechanisms of PF on beta 2-AR desensitization and beta 2-AR-AC-cAMP signal of lymphocytes play crucial roles in of this disease.[6]

Paeoniflorin may have antiallergic effect, it can potently inhibit passive cutaenous anaphylaxis (PCA) reaction and scratching behaviors in mice, it exhibits potent inhibition against scratching behaviors and the acetic acid-induced writhing syndrome in mice.[7]

Paeoniflorin, a novel heat shock protein-inducing compound, is mediated by the activation of heat shock transcription factor 1 (HSF1).[8]

Paeoniflorin produces a significant blood sugar lowering effect in streptozotocin-treated rats and has a maximum effect at 25 min after treatment, this hypoglycemic action was also observed in normoglycemic rats only at 1 mg/kg. [9]

[Solvent]

Pyridine, Methanol, Ethanol, etc.

[HPLC Method][10]

Mobile phase: Acetonitrile – H2O – Acetic acid =18:82:0.4;

Flow rate: 1.0 ml/min;

Column temperature: Room Temperature;

The wave length of determination: 230 nm.

[Storage]

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

[References]

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[3] Liu H Q, Zhang W Y, Luo X T, *et al. Brit. J. Pharmacol., 2006, 148(10):314–25.*

[4] Wu H, Li W, Wang T, *et al. Biomed. Pharmacother., 2008, 62(9):659-66.*

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[6] Wu H, Wei W, Song L, *et al. Int. Immunopharmacol., 2007, 7(5):662-73.*

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[9] Hsu F L, Lai C W, Cheng J T. *Planta Med., 1997, 63(4):323-5.*

[10] Cheng S, Qiu F, Wang S, *et al. Chromatographia, 2006, 64(64):661-6.*

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