

Platycodin D Datasheet

4th Edition (Revised in July, 2016)

[Product Information]

Name: Platycodin D

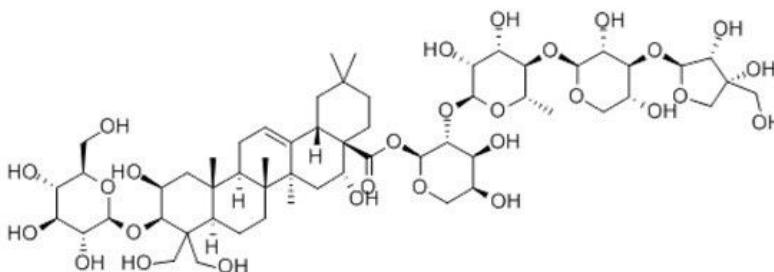
Catalog No.: CFN98134

Cas No.: 58479-68-8

Purity: > 98%

M.F: C₅₇H₉₂O₂₈

M.W: 1225.33



Physical Description: White powder

Synonyms: (4aR,5R,6aR,6aS,6bR,8aR,10R,11S,12aR,14bS)-5,11-dihydroxy-9,9-bis(hydroxymethyl)-2,2,6a,6b,12a-pentamethyl-10-[[[(2R,3R,4S,5S,6R)-3,4,5-trihydroxy-6-(hydroxymethyl)-2-oxanyloxy]-1,3,4,5,6,6a,7,8,8a,10,11,12,13,14b-tetradecahydricene-4a-carboxylic acid.

[Intended Use]

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

[Source]

The root of *Platycodon grandiflorum*.

[Biological Activity or Inhibitors]

Platycodon D (PD) and D3 (PD3) isolated from *Platycodon grandiflorum* has been previously reported to show anti-inflammatory activities in rats, PD may stimulate TNF- α synthesis or inhibit degradation of TNF- α mRNA, suggest a dichotomous regulation of these important proinflammatory mediators by PD and PD3.^[1]

Platycodin D suppresses prostaglandin E2 production at 10 and 30 μ M in rat peritoneal macrophages stimulated by the protein kinase C activator 12-O-tetradecanoylphorbol 13-acetate (TPA).^[2]

Platycodin D has the ability to induce apoptosis in HaCaT cells through the upregulation of Fas receptor and FasL expression via to NF- κ B activation in the transcriptional level, suggests that the NF- κ B activation plays a crucial role in the induction of apoptosis in human HaCaT cells on treatment with platycodin D.^[3]

Platycodin D significantly promotes the production of Th1 (IL-2 and IFN- γ) and Th2 (IL-10) cytokines and up-regulates the mRNA expression of Th1 cytokines (IL-2 and IFN- γ) in splenocytes from the mice immunized with HBsAg, also increases the killing activities of natural killer (NK) cells and CTLs from splenocytes in the HBsAg-immunized mice, which may have important implications for vaccination against hepatitis B virus, suggests that PD may be the candidates as adjuvants for use in prophylactic and therapeutic hepatitis B vaccine.^[4]

Platycodin D can induce autophagy in NCI-H460 and A549 cells through inhibiting PI3K/Akt/mTOR signaling pathway and activating JNK and p38 MAPK signaling pathways.^[5]

Platycodin D has showed an antinociceptive effect .^[6]

Platycodin D can inhibit migration, invasion, and growth of MDA-MB-231 human breast cancer cells via suppression of EGFR-mediated Akt and MAPK pathways.^[7]

[Solvent]

Pyridine, Methanol, Ethanol, Hot water, etc.

[HPLC Method]^[8]

HPLC-ELSD:

Mobile phase: Acetonitrile- H₂O=25:75 ;

Flow rate: 0.7 ml/min;

Column temperature: 30 °C;

Drift tube temperature: 90 °C

Flow rate of gas : 1.8L/min.

[Storage]

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

[References]

- [1] Wang C, Levis G B S, Lee E B, *et al. Int. Immunopharmacol.*, 2004, 4(8):1039-49.
- [2] Kim Y P, Lee E B, Kim S Y, *et al. Planta Med.*, 2001, 67(4):362-4.
- [3] Ahn K S, Hahn B S, Kwack K B, *et al. Eur. J. Pharm.*, 2006, 537(1-3):1-11.
- [4] Xie Y, Sun H X, Li D. *Vaccine*, 2009, 27(5):757764.
- [5] Zhao R, Chen M, Jiang Z, *et al. J. Cancer*, 2015, 6(7):623-31.
- [6] SeongSoo Choi, EunJung Han, TaeHee Lee, *et al. Am. J. Chinese Med.*, 2004, 32(2): 257-68.
- [7] Chun J, Kim Y S. *Chem.-Biol. Interact.*, 2013, 205(3):212-21.
- [8] Chen G, Tai S, Huang L. *China Pharm.*, 014(18):51-3.

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