Natural Products

ChemFaces

Cycloastragenol Datasheet

4th Edition (Revised in July, 2016)

[Product Information]

Name: Cycloastragenol

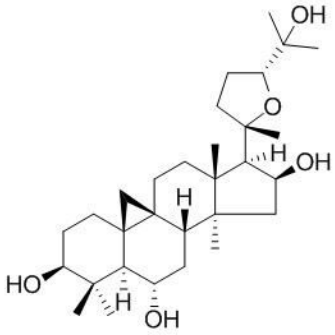
Catalog No.: CFN99538

Cas No.: 84605-18-5

Purity: > 98%

M.F: $C_{30}H_{50}O_5$

M.W: 490.71



Physical Description: Cryst.

Synonyms: (3b,6a,16b,20R,24S)20,24-Epoxy-9,19-cyclolanostane-3,6,16,25-tetrol.

[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 root of *Astragalus membranaceus (Fisch.) Bunge.*

[Biological Activity or Inhibitors]

Cycloastragenol(CAG), a triterpene aglycone derived from Radix astragali , can suppress the accumulation of cytoplasmic lipid droplet in 3T3-L1 adipocytes.[1]

Two Chinese herb-derived small molecule telomerase activators, astragaloside IV (AG-IV) and cycloastragenol, have recently been shown to improve the proliferative response of CD8+ T lymphocytes from HIV-infected patients by upregulating telomerase activity, they also may exert their cellular effects through the activation of the Src/MEK/ERK pathway.[2]

Cycloastragenol is the aglycone derivative of astragaloside IV which has recently been demonstrated to activate telomerase and represents a potential drug candidate for the treatment of degenerative diseases, it is efficiently absorbed through intestinal epithelium; it moderately increases telomerase activity and proliferative capacity of both CD4 and CD8 T cells. [3,4]

Cycloastragenol and astragaloside IV suppress ROS-associated ER stress and then inhibited TXNIP/NLRP3 inflammasome activation with regulation of AMPK activity, and thereby ameliorated endothelial dysfunction by inhibiting inflammation and reducing cell apoptosis, they are equally effective in regulation of endothelial homeostasis.[5]

Cycloastragenol can remarkably inhibit CYP3A4 and activate CYP2E1 in rats.[6]

Cycloastragenol has been shown to extend T cell proliferation by increasing telomarase activity showing that it may also help delay the onset of cellular aging; it is an extraordinary wound healing agent; it inhibits the apoptosis of PC12 induced by 6-OHDA, may be as potential neuroprotective agents in the treatment of Parkinson's disease. [7]

[Solvent]

Chloroform, Dichloromethane, DMSO, Acetone, etc.

[HPLC Method][8]

TLC:

Expand agents: Trichloromethane- Methanol-H2O = 65: 35:10 ;

Chromogenic agents: 15%Sulfuric acid ethanol solution ;

The wave length of determination: 500, 700 nm.

[Storage]

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

[References]

[1] Wang S, Zhai C, Liu Q, *et al. Biochem. Bioph. Res. Co., 2014, 450(1):306-11.*

[2] Yung L Y, Lam W S, Ho M K, *et al. Planta Med., 2011, 78(2):115-21.*

[3] Zhu J, Lee S, Ho M K C, *et al. Drug Metab. Pharmacok., 2010, 25(5):477-86.*

[4] Valenzuela H F, Fuller T, Edwards J, *et al. J. Immunol., 2009, 182.*

[5] Yan Z, Qiang L, Zhao W, *et al.J. Ethnopharmacol., 2015, 169(20):210-8.*

[6] Wei B H, Jing Y E, Xue B J, *et al. Chinese Journal of New Drugs, 2014, 23(4):476-9.*

[7] Nesil T, Ürkmez A Ş, Bedir E. *Planta Med., 2011, 77(12):1444.*

[8] Wang J S. *Strait Pharmacy, 2009, 21 (2): 39-41.*

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