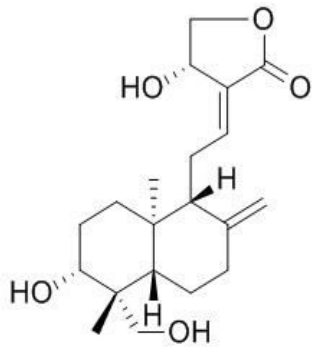
Natural Products

ChemFaces

Andrographolide Datasheet

4th Edition (Revised in July, 2016)

[Product Information]



Name: Andrographolide

Catalog No.: CFN98923

Cas No.: 5508-58-7

Purity: > 98%

M.F: $C_{20}H_{30}O_5$

M.W: 350.5

Physical Description: Powder

Synonyms:(3E,4S)-3-[2-[(1R,4aS,5R,6R,8aS)-6-hydroxy-5-(hydroxymethyl)-5,8a-dimethyl-2-methylene-3,4,4a,6,7,8-hexahydro-1H-naphthalen-1-yl]ethylidene]-4-hydroxy-2-oxolanone.

[Intended Use]

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

[Source]

The herb of *Andrographis paniculata (Burm. f.) Nees.*

[Biological Activity or Inhibitors]

Andrographolide, an active principle of the Chinese drug Andrographis paniculata, used for prevention and treatment of common cold in Scandinavia and known as an antiinflammatory, antiviral, antithrombotic, hypotensive and antiatherosclerotic drug, was investigated for its suggested influence on the biosynthesis of eicosanoids and the platelet-activating factor (PAF), suggests that it has a mechanism of action different from that of non-steroidal antiinflammatory drugs (NSAID) and most likely associated with the cardiovascular and antithrombotic activity described of Andrographis paniculata.[1]

Andrographolide has anti-inflammatory effects, it prevents oxygen radical production by human neutrophils; the prevention of ROS production through, at least in part, modulation of PKC-dependent pathway could confer ANDRO the ability to down-regulate Mac-1 up-expression that is essential for neutrophil adhesion and transmigration.[2]

Andrographolide attenuates inflammation by inhibition of NF-κB activation through covalent modification of reduced cysteine 62 of p50.[3]

Andrographolide may inhibit HIV-induced cell cycle dysregulation, leading to a rise in CD4(+) lymphocyte levels in HIV-1 infected individuals. [4]

Therapeutic interventions using andrographolide can benefit the treatment of vascular inflammatory diseases, and andrographolide-mediated inhibition of NF-κB activity in TNF-α-stimulated VSMCs occurs through the JNK-Akt-p65 signaling cascade, an IκBα-independent mechanism.[5]

Andrographolide dose-dependently suppresses the severity of LPS-induced acute lung injury(ALI), more likely by virtue of andrographolide-mediated NF-κB inhibition at the level of IKKβ activation, suggests andrographolide may be considered as an effective and safe drug for the potential treatment of ALI.[6]

Andrographolide has hepatoprotective activity against carbontetrachloride; it completely antagonizes the toxic effects of paracetamol on certain enzymes (GOT, GPT and alkaline phosphatase) in serum as well as in isolated hepatic cells, it is found to be more potent than silymarin, a standard hepatoprotective agent.[7,8]

Andrographolide has anti-cancer activity, the inhibition on MMP-7 expression by andrographolide may be through suppression on PI3K/Akt/AP-1 signaling pathway, which in turn led to the reduced invasiveness of the cancer cells; andrographolide sensitizes cancer cells to TRAIL-induced apoptosis via p53-mediated death receptor 4 up-regulation.[9,10]

[Solvent]

Chloroform, Dichloromethane, DMSO, Acetone, etc.

[HPLC Method][11]

Mobile phase: Methanol : H2O=52:48 ;

Flow rate: 0.8 ml/min;

Column temperature: Room Temperature;

The wave length of determination: 225 nm.

[Storage]

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

[References]

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