Natural Products

ChemFaces

Mevastatin Datasheet

4th Edition (Revised in July, 2016)

[Product Information]

Name: Mevastatin

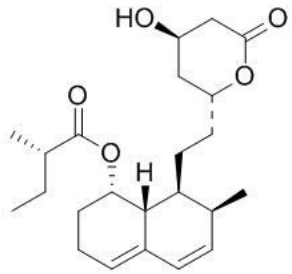
Catalog No.: CFN90426

Cas No.: 73573-88-3

Purity: >=98%

M.F: $C_{23}H_{34}O_5$

M.W: 390.51



Physical Description: Powder

Synonyms:[(1S,7S,8S,8aR)-8-[2-[(2R,4R)-4-hydroxy-6-oxooxan-2-yl]ethyl]-7-methyl-1,2,3,7,8,8a-hexahydronaphthalen-1-yl] (2S)-2-methylbutanoate.

[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]

From *Penicillium Citrinum.*

[Biological Activity or Inhibitors]

Mevastatin, an 3-hydroxy-3-methylglutaryl coenzyme A (HMG-CoA) reductase inhibitor, can reduce stroke damage, improve neurological deficits, and upregulate endothelial nitric oxide synthase in mice.[1]

Mevastatin may enhance the antiproliferative effect of butyrate in colon cancer cells via induction of apoptosis together with a G0/G1 cell cycle arrest.[2]

Mevastatin reduces inflammatory cell infiltration and matrix-degrading enzyme expression, thus limiting cartilage degradation, during the development of experimental osteoarthritis (OA). [3]

Mevastatin suppresses melanogenesis by lowering the levels of cyclic adenosine monophosphate and cholesterol; mevastatin can act as a neurotoxic agent or neuroprotective agent, depending upon the extent of its hydrolysis to an open-ring structure and the level of mevalonic acid.[4]

Mevastatin inhibits Leishmania donovani promastigotes and intracellular amastigotes with an 50% inhibitory concentration (IC_{50}) value of 23.865±654.2 and 7.565±651.1 uM, respectively, without exhibiting toxicity towards host cell line; it also inhibits recombinant L. donovani HMGR (Ld HMGR) enzyme activity with an IC_{50} value of 42.265±653.0 uM; hence, antileishmanial effect of mevastatin is due to the inhibition of HMGR, which eventually leads to reduction in ergosterol levels and hence parasite death.[5]

[Solvent]

Chloroform, Dichloromethane, Ethyl Acetate, DMSO, Acetone, etc.

[HPLC Method][6]

Mobile phase: Acetonitrile-0.1%Phosphoric acid H2O=70:30 ;

Flow rate: 0.8 ml/min;

Column temperature: 30 ℃;

The wave length of determination: 238 nm.

[Storage]

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

[References]

[1] Aminhanjani S, Stagliano N E, Yamada M, *et al. Stroke, 2001, 32(4):980-6.*

[2] Wächtershäuser A, Akoglu B, Stein J. *Carcinogenesis, 2001, 22(7):1061-7.*

[3] Akasaki Y, Matsuda S, Nakayama K, *et al. Osteoarthr. Cartilage, 2009, 17(17):235-43.*

[4] Lee H J, Jo S Y, Hwang J S, *et al. Exp. Dermatol., 2016, 25(10):820-2.*

[5] Dinesh N, Soumya N, Singh S. *Parasitol. Res., 2015, 114(10):1-11.*

[6] Yang S P, Ding J H, He H X, *et al. West China Journal of Pharmaceutical Sciences, 2008, 23(4):442-4.*

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