Natural Products

ChemFaces

Betulin Datasheet

4th Edition (Revised in July, 2016)

[Product Information]

Name: Betulin

Catalog No.: CFN98710

Cas No.: 473-98-3

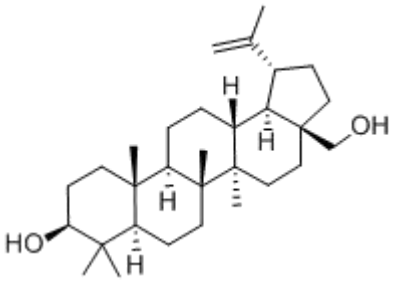
Purity: >=98%

M.F: $C_{30}H_{50}O_2$

M.W: 442.72

Physical Description: Powder

Synonyms: Lup-20(29)-ene-3b,28-diol.



[Intended Use]

1. Reference standards;

2. Pharmacological research;

3. Synthetic precursor compounds;

4. Intermediates & Fine Chemicals;

5. Others.

[Source]

The barks of *Betula alba L.*

[Biological Activity or Inhibitors]

Betulin is an abundant naturally occurring triterpene and it is found predominantly in

bushes and trees forming the principal extractive (up to 30% of dry weight) of the bark of birch trees, it has antimalarial and anti-inflammatory activities; it and its derivatives have especially shown anti-HIV activity and cytotoxicity against a variety of tumor cell lines comparable to some clinically used drugs .[1]

Betulinic acid and its derivatives have cytotoxicity,they have potent anti-tumor activity especially in combination with cholesterol.[2]

Betulinic acid has anti-AIDS activity.[3]

Betulin has inhibition of sterol regulatory element-binding proteins (SREBPs), SREBPs are major transcription factors activating the expression of genes involved in biosynthesis of cholesterol, fatty acid and triglyceride, inhibition SREBP pathway can be employed as a therapeutic strategy to treat metabolic diseases including type II diabetes and atherosclerosis; thus betulin can improves hyperlipidemia and insulin resistance and reduce atherosclerotic plaques.[4]

Betulin and betulinic acid inhibit ethanol-induced activation of hepatic stellate cells (HSCs) on different levels, acting as antioxidants, inhibitors of cytokine production, and inhibitors of tumor growth factor- β (TGF- β), and nuclear factor- κ B (NF κ B)/I κ B transduction signaling; betulin is also inhibitor of both JNK and p38 MAPK signal transduction, while betulinic acid inhibits only c-Jun N-terminal kinase (JNK), suggests that they are promising agents for anti-fibrotic combination therapies.[5]

[Solvent]

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

[HPLC Method][6]

Mobile phase: Acetonitrile- H2O=86:14 ;

Flow rate: 1.0 ml/min;

Column temperature: Room Temperature;

The wave length of determination: 210 nm.

[Storage]

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

[References]

[1] Alakurtti S, Mäkelä T, Koskimies S, *et al. Eur. J. Pharm. Sci., 2006, 29(1):1-13.*

[2] Franziska B. Mullauer, Jan H. Kessler, Jan Paul Medema. *Plos One, 2009, 4(4):e1-e1.*

[3] Sun C, Wang H K, Yoshiki Kashiwada , *et al. J. Med. Chem., 1998, 41(23):4648-57.*

[4] Tang J J, Li J G, Qi W, *et al. Cell Metab., 2011, 13(1):44-56.*

[5] Szuster-Ciesielska A, Plewka K, Daniluk J, *et al. Toxicology, 2011, 280(3):152-63.*

[6] Zhao G, Yan W, Dan C. *J. Pharmaceut. Biomed. Anal., 2007, 43(3):959-62.*

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