Product Information

Betulin
Item No. 11041

CAS Registry No.: 473-98-3
Formal Name: lup-20(29)-ene-3β,28-diol
Synonyms: NSC 4644, Trochol
MF: C30H50O2
FW: 442.7
Purity: ≥98%
Stability: ≥2 years at -20°C
Supplied as: A crystalline solid

Laboratory Procedures

For long term storage, we suggest that betulin be stored as supplied at -20°C. It should be stable for at least two years.

Betulin is supplied as a crystalline solid. A stock solution may be made by dissolving the betulin in the solvent of choice. Betulin is soluble in dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of betulin in DMF is approximately 2.5 mg/ml.

Betulin is sparingly soluble in aqueous solutions. To enhance aqueous solubility, dilute the organic solvent solution into aqueous buffers or isotonic saline. If performing biological experiments, ensure the residual amount of organic solvent is insignificant, as organic solvents may have physiological effects at low concentrations. We do not recommend storing the aqueous solution for more than one day.

Sterol regulatory element binding protein 2 (SREBP-2) regulates cholesterol synthesis by activating the transcription of genes for HMG-CoA reductase and other enzymes of the cholesterol synthetic pathway.2,3 When cellular sterol levels are high, SREBP is bound by SCAP and Insg to ER membranes as a glycosylated precursor protein. Upon cholesterol depletion, the protein is cleaved to its active form and translocated into the nucleus to stimulate transcription of genes involved in the uptake and synthesis of cholesterol.3 Betulin, the precursor of betulinic acid, is a pentacyclic triterpene found in the bark of birch trees. Betulin inhibits the SREBP-driven pathway of cholesterol and fatty acid biosynthesis by promoting SCAP-Insg binding which prevents the activation and release of SREBP-2 from the ER.4 At 15-30 mg/kg/day, betulin has been shown to decrease lipid levels and increase insulin sensitivity in mice fed a western-type diet.4 In an atherosclerosis disease model, 30 mg/kg/day betulin can reduce the size and improve the stability of atherosclerotic plaques in LDLR-knockout mice.4 At 2.5-5 μg/ml betulin, in combination with cholesterol, demonstrates anticancer effects by inducing apoptosis in Jurkat cells, A549 lung carcinoma cells, and HeLa cervical carcinoma cells.5

References


Related Products

For a list of related products please visit: www.caymanchem.com/catalog/11041

For further details, please refer to our Warranty and Limitation of Remedy located on our website and in our catalog.