

PRODUCT INFORMATION

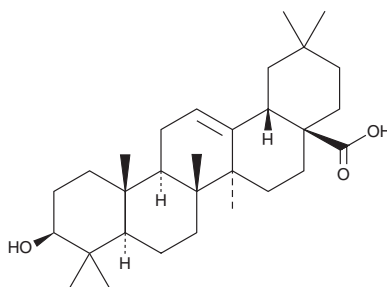


Oleanolic Acid

Item No. 11726

CAS Registry No.: 508-02-1
Formal Name: 3 β -hydroxy-olean-12-en-28-oic acid
Synonyms: Astrantiagenin C, Caryophyllin, Giganteumgenin C, Gledigenin 1, NSC 114945, Oleanolic Acid, Virgaureagenin B

MF: C₃₀H₄₈O₃
FW: 456.7
Purity: \geq 95%
Supplied as: A crystalline solid
Storage: -20°C
Stability: \geq 4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Oleanolic acid is supplied as a crystalline solid. A stock solution may be made by dissolving the oleanolic acid in the solvent of choice, which should be purged with an inert gas. Oleanolic acid is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of oleanolic acid in these solvents is approximately 5, 3, and 30 mg/ml, respectively.

Oleanolic acid is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, oleanolic acid should first be dissolved in DMF and then diluted with the aqueous buffer of choice. Oleanolic acid has a solubility of approximately 0.3 mg/ml in a 1:2 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Oleanolic acid is a pentacyclic triterpenoid that has been found in *O. europaea* and has diverse biological activities.¹⁻⁵ It is active against *S. aureus*, *B. thuringiensis*, *E. coli*, *S. enterica*, and *S. dysenteriae* (MICs = 1.9, 1.9, 7.8, 3.9, and 1.9 μ g/ml, respectively) and scavenges hydroxyl and superoxide radicals in cell-free assays when used at a concentration of 1 mg/ml. Oleanolic acid is cytotoxic to DU145 prostate and MCF-7 breast cancer cells, as well as U87 glioblastoma cells, with IC₅₀ values of 112.57, 132.29, and 163.6 μ g/ml.³ It reduces LPS-induced adherence of THP-1 monocytes to human umbilical vein endothelial cells (HUVECs) in a co-culture model of monocyte-endothelial cell adhesion when used at concentrations ranging from 10 to 50 μ M.⁴ Oleanolic acid (200 μ mol/kg) decreases liver necrosis in several mouse models of liver injury, including those induced by acetaminophen (Item No. 10024), carbon tetrachloride (CCl₄), or LPS/D-galactosamine.⁵

References

1. Wang, X., Ye, X.-I., Liu, R., *et al.* Antioxidant activities of oleanolic acid in vitro: Possible role of Nrf2 and MAP kinases. *Chem. Biol. Interact.* **184**(3), 328-337 (2010).
2. Wang, J., Ren, H., Xu, Q.-L., *et al.* Antibacterial oleanane-type triterpenoids from pericarps of *Akebia trifoliata*. *Food Chem.* **168**, 623-629 (2015).
3. Kim, G.-J., Jo, H.-J., Lee, K.-J., *et al.* Oleanolic acid induces p53-dependent apoptosis via the ERK/JNK/AKT pathway in cancer cell lines in prostatic cancer xenografts in mice. *Oncotarget* **9**(41), 26370-26386 (2018).
4. Lee, W., Yang, E.-J., Ku, S.-K., *et al.* Anti-inflammatory effects of oleanolic acid on LPS-induced inflammation *in vitro* and *in vivo*. *Inflammation* **36**(1), 94-102 (2013).
5. Liu, J., Liu, Y., and Klaassen, C.D. Protective effect of oleanolic acid against chemical-induced acute necrotic liver injury in mice. *Zhongguo Yao Li Xue Bao* **16**(2), 97-102 (1995).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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