Print Date: Sep 16th 2016

Certificate of Analysis

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Product Name: **Oleanolic acid** **Catalog No.: 6026** **Batch No.: 1**

CAS Number: 508-02-1

IUPAC Name: (3β)-3-Hydroxyolean-12-en-28-oic acid

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: $C_{30}H_{48}O_3 \cdot ¾H_2O$

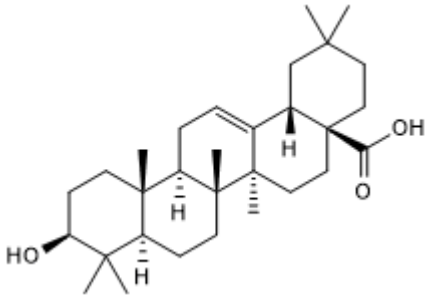
Batch Molecular Weight: 470.21

Physical Appearance: White solid

Solubility: DMSO to 20 mM with gentle warming
ethanol to 10 mM with gentle warming

Storage: Store at +4°C

Batch Molecular Structure:



2. ANALYTICAL DATA

HPLC: Shows 97% purity

^{1}H NMR: Consistent with structure

Mass Spectrum: Consistent with structure

Microanalysis:

	Carbon	Hydrogen	Nitrogen
Theoretical	76.63	10.61	
Found	76.59	10.57	

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IUPAC Name: (3β)-3-Hydroxyolean-12-en-28-oic acid

Description:

GPBA receptor (TGR5) partial agonist (EC_{50} = 2.25 μM; 72% efficacy). Displays no activity at FXR. Also inhibits protein phosphate 1B (PTP1B) and glycogen phosphorylase. Suppresses cell proliferation and increases apoptosis in T24 bladder cancer cells. Antidiabetic, antihyperglycaemic, antitumor and hepatoprotective.

Physical and Chemical Properties:

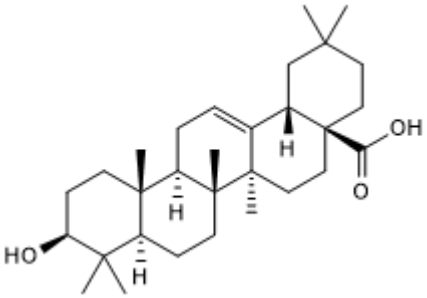
Batch Molecular Formula: $C_{30}H_{48}O_3.¾H_2O$

Batch Molecular Weight: 470.21

Physical Appearance: White solid

Minimum Purity: >97%

Batch Molecular Structure:



Storage: Store at +4°C

Solubility & Usage Info:

DMSO to 20 mM with gentle warming
ethanol to 10 mM with gentle warming

Stability and Solubility Advice:

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a 45-60°C water bath).

Information concerning product stability, particularly in solution, has rarely been reported and in most cases we can only offer a general guide. Our standard recommendations are:

SOLIDS: Provided storage is as stated on the product label and the vial is kept tightly sealed, the product can be stored for up to 6 months from date of receipt.

SOLUTIONS: We recommend that stock solutions, once prepared, are stored aliquoted in tightly sealed vials at -20°C or below and used within 1 month. Wherever possible solutions should be made up and used on the same day.

References:

Mu *et al* (2015) Oleanolic acid suppresses the proliferation of human bladder cancer by Akt/mTOR/S6K and ERK1/2 signaling. Int.J.Clin.Exp.Pathol. ***8*** 13864. PMID: 26823699.

Castellano *et al* (2013) Biochemical basis of the antidiabetic activity of oleanolic acid and related pentacyclic triterpenes. Diabetes ***62*** 1791. PMID: 23704520.

Genet *et al* (2010) Structure-activity relationship study of betulinic acid, a novel and selective TGR5 agonist, and its synthetic derivatives: potential impact in diabetes. J.Med.Chem. ***53*** 178. PMID: 19911773.