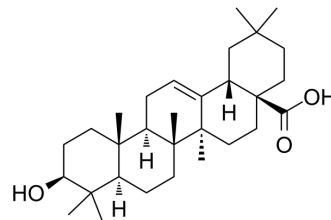


## Oleanolic Acid

<b>Cat. No.:</b>	HY-N0156		
<b>CAS No.:</b>	508-02-1		
<b>Molecular Formula:</b>	C <sub>30</sub> H <sub>48</sub> O <sub>3</sub>		
<b>Molecular Weight:</b>	456.7		
<b>Target:</b>	Autophagy; Endogenous Metabolite; HIV		
<b>Pathway:</b>	Autophagy; Metabolic Enzyme/Protease; Anti-infection		
<b>Storage:</b>	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	6 months
		-20°C	1 month



### SOLVENT & SOLUBILITY

<b>In Vitro</b>	DMSO : 5 mg/mL (10.95 mM; Need ultrasonic)				
		Solvent Concentration	Mass 1 mg	5 mg	10 mg
	<b>Preparing Stock Solutions</b>	1 mM	2.1896 mL	10.9481 mL	21.8962 mL
		5 mM	0.4379 mL	2.1896 mL	4.3792 mL
10 mM		0.2190 mL	1.0948 mL	2.1896 mL	
Please refer to the solubility information to select the appropriate solvent.					
<b>In Vivo</b>	<ol style="list-style-type: none"> <li>Add each solvent one by one: 10% DMSO &gt;&gt; 40% PEG300 &gt;&gt; 5% Tween-80 &gt;&gt; 45% saline Solubility: 0.5 mg/mL (1.09 mM); Suspended solution; Need ultrasonic</li> <li>Add each solvent one by one: 10% DMSO &gt;&gt; 90% (20% SBE-β-CD in saline) Solubility: 0.5 mg/mL (1.09 mM); Suspended solution; Need ultrasonic</li> <li>Add each solvent one by one: 10% DMSO &gt;&gt; 90% corn oil Solubility: ≥ 0.5 mg/mL (1.09 mM); Clear solution</li> </ol>				

### BIOLOGICAL ACTIVITY

<b>Description</b>	Oleanolic acid (Caryophyllin) is a natural compound from plants with anti-tumor activities.
<b>IC<sub>50</sub> &amp; Target</b>	Human Endogenous Metabolite
<b>In Vitro</b>	Oleanolic acid (OA) suppresses the proliferation of lung cancer cells in both dose- and time-dependent manners, along with an increase in miR-122 abundance. CCNG1 and MEF2D, two putative miR-122 targets, are found to be downregulated by OA treatment [1]. OA induces autophagy in normal tissue-derived cells without cytotoxicity. OA-induced autophagy is shown to

decrease the proliferation of KRAS-transformed normal cells and to impair their invasion and anchorage-independent growth<sup>[2]</sup>.

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

#### In Vivo

Mouse model experiments also demonstrate that OA suppresses the growth of KRAS-transformed breast epithelial cell MCF10A-derived tumor xenograft by inducing autophagy<sup>[2]</sup>. Activation of MAPK pathways, including p-38 MAPK, JNK and ERK, is triggered by OA in both a dose and time-dependent fashion in all the tested cancer cells. OA induces p38 MAPK activation promoted mitochondrial translocation of Bax and Bim, and inhibits Bcl-2 function by enhancing their phosphorylation. OA can induce reactive oxygen species (ROS)-dependent ASK1 activation, and this event is indispensable for p38 MAPK-dependent apoptosis in cancer cells<sup>[3]</sup>. It is also proved that p38 MAPK knockdown A549 tumors are resistant to the growth-inhibitory effect of OA<sup>[3]</sup>. In OA-treated EAM mice the number of Treg cells and the production of IL-10 and IL-35 are markedly increased, while proinflammatory and profibrotic cytokines are significantly reduced<sup>[4]</sup>.

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

## CUSTOMER VALIDATION

- Biomed Pharmacother. 2020 Mar;123:109752.
- Exp Cell Res. 2020 Aug 1;393(1):112054.

See more customer validations on [www.MedChemExpress.com](http://www.MedChemExpress.com)

## REFERENCES

- [1]. Zhao X, et al. Oleanolic acid suppresses the proliferation of lung carcinoma cells by miR-122/Cyclin G1/MEF2D axis. Mol Cell Biochem. 2015 Feb;400(1-2):1-7.
- [2]. Liu J, et al. Oleanolic acid inhibits proliferation and invasiveness of Kras-transformed cells via autophagy. J Nutr Biochem. 2014 Nov;25(11):1154-60.
- [3]. Liu J, et al. p38 MAPK signaling mediates mitochondrial apoptosis in cancer cells induced by oleanolic acid. Asian Pac J Cancer Prev. 2014;15(11):4519-25.
- [4]. Martín R, et al. Oleanolic acid modulates the immune-inflammatory response in mice with experimental autoimmune myocarditis and protects from cardiac injury. Therapeutic implications for the human disease. J Mol Cell Cardiol. 2014 Jul;72:250-62.

**Caution: Product has not been fully validated for medical applications. For research use only.**

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