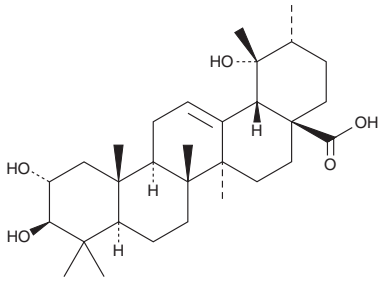
PRODUCT INFORMATION

Tormentic Acid

Item No. 30696

CAS Registry No.:	13850-16-3
Formal Name:	(2α,3β)-2,3,19-trihydroxy-urs-12-en-28-oic acid
Synonym:	Tormentolic Acid
MF:	$C_{30}H_{48}O_5$
FW:	488.7
Purity:	≥95%
Supplied as:	A crystalline solid
Storage:	-20°C
Stability:	≥4 years



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

Laboratory Procedures

Tormentic acid is supplied as a crystalline solid. A stock solution may be made by dissolving the tormentic acid in the solvent of choice, which should be purged with an inert gas. Tormentic acid is soluble in DMSO.

Description

Tormentic acid is a triterpene that has been found in *P. frutescens* and has diverse biological activities, including anti-inflammatory, anticancer, antioxidative, and antidiabetic properties.[1-3] It reduces hydrogen peroxide-induced increases in inducible nitric oxide synthase (iNOS) and NADPH oxidase (NOX1), as well as the production of TNF-α, IL-6, and IL-1β in rat vascular smooth muscle cells (RVSMCs) when used at concentrations of 12.5, 25, and 50 µM.[2] Tormentic acid (25 and 50 µM) decreases hydrogen peroxide-induced generation of reactive oxygen species (ROS) in RVSMCs. It reduces ear edema induced by phorbol 12-myristate 13-acetate (TPA; Item No. 10008014) in mice (ID_{50} = 0.03 mg/ear).[1] Topical application of tormentic acid (1.7 nmol) reduces the number of papillomas formed per mouse in a DMBA-TPA two-stage model of mouse skin carcinogenesis. It also reduces increases in blood glucose, insulin, and leptin levels, as well as hepatic triglyceride levels, in mice fed a high-fat diet in a model of diabetes and hyperlipidemia when administered at doses of 60 and 120 mg/kg per day.[3]

References

1. Banno, N., Akihisa, T., Tokuda, H., *et al*. Triterpene acids from the leaves of *Perilla frutescens* and their anti-inflammatory and antitumor-promoting effects. *Biosci. Biotechnol. Biochem.* **68(1)**, 85-90 (2004).
2. Wang, Y.-L., Sun, G.-Y., Zhang, Y., *et al*. Tormentic acid inhibits H_2O_2-induced oxidative stress and inflammation in rat vascular smooth muscle cells via inhibition of the NF-κB signaling pathway. *Mol. Med. Rep.* **14(4)**, 3559-3564 (2016).
3. Wu, J.-B., Kuo, Y.-H., Lin, C.-H., *et al*. Tormentic acid, a major component of suspension cells of Eriobotrya japonica, suppresses high-fat diet-induced diabetes and hyperlipidemia by glucose transporter 4 and AMP-activated protein kinase phosphorylation. *J. Agric. Food Chem.* **62(44)**, 10717-10726 (2014).

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