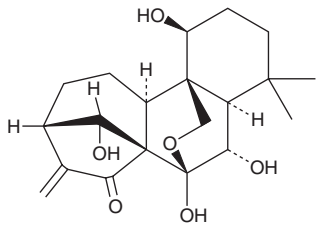
PRODUCT INFORMATION

Oridonin

Item No. 25665

CAS Registry No.:	28957-04-2
Formal Name:	7,20-epoxy-1α,6β,7α,14R-tetrahydroxy-kaur-16-en-15-one
Synonym:	NSC 250682
MF:	$C_{20}H_{28}O_6$
FW:	364.4
Purity:	≥98%
UV/Vis.:	λ_{max}: 238 nm
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

Oridonin is supplied as a crystalline solid. A stock solution may be made by dissolving the oridonin in the solvent of choice, which should be purged with an inert gas. Oridonin is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of oridonin in ethanol is approximately 20 mg/ml and approximately 30 mg/ml in DMSO and DMF.

Oridonin is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, oridonin should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. Oridonin has a solubility of approximately 0.1 mg/ml in a 1:9 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Oridonin is a diterpenoid that has been found in *R. rubescens* and has anti-inflammatory and anticancer properties.[1,2] It is an inhibitor of AKT1 and AKT2 (IC_{50}s = 8.4 and 8.9 µM, respectively).[1] Oridonin inhibits proliferation of KYSE70, KYSE410, and KYSE450 esophageal cancer cells in a dose-dependent manner, halts the cell cycle at the G_2/M phase, and induces apoptosis when used at a concentration of 20 µM. It decreases the expression of cleaved poly(ADP-ribose) polymerase (PARP), caspase-3, caspase-7, and Bim_s and the protein levels of phosphorylated AKT and reduces AKT activity. Oridonin reduces tumor growth in patient-derived mouse tumor models when administered at doses of 40 and 160 mg/kg. Oridonin is also an inhibitor of NLRP3 inflammasome assembly and activation.[2] It inhibits inflammation in wild-type, but not *Nlrp3*$^{-/-}$, mice in a model of high-fat diet-induced type 2 diabetes when administered at a dose of 3 mg/kg.

References

1. Song, M., Liu, X., Liu, K., *et al.* Targeting AKT with oridonin inhibits growth of esophageal squamous cell carcinoma *in vitro* and patient-derived xenografts *in vivo*. *Mol. Cancer. Ther.* **17(7)**, 1540-1553 (2018).
2. He, H., Jiang, H., Chen, Y., *et al.* Oridonin is a covalent NLRP3 inhibitor with strong anti-inflammasome activity. *Nat. Commun.* **9(1)**, 2550 (2018).

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