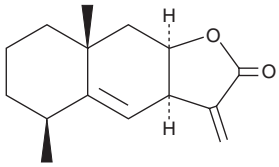
PRODUCT INFORMATION

Alantolactone

Item No. 29762

CAS Registry No.:	546-43-0
Formal Name:	(3aR,5S,8aR,9aR)-3a,5,6,7,8,8a,9,9a-octahydro-5,8a-dimethyl-3-methylene-naphtho[2,3-b]furan-2(3H)-one
Synonyms:	(+)-Alantolactone, NSC 333843, NSC 93131
MF:	$C_{15}H_{20}O_2$
FW:	232.3
Purity:	≥98%
Supplied as:	A crystalline solid
Storage:	-20°C
Stability:	≥4 years
Item Origin:	*Aucklandiae* radix



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

Laboratory Procedures

Alantolactone is supplied as a crystalline solid. A stock solution may be made by dissolving the alantolactone in the solvent of choice, which should be purged with an inert gas. Alantolactone is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of alantolactone in ethanol and DMF is approximately 30 mg/ml and 25 mg/ml in DMSO.

Alantolactone is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, alantolactone should first be dissolved in ethanol and then diluted with the aqueous buffer of choice. Alantolactone has a solubility of approximately 0.12 mg/ml in a 1:7 solution of ethanol:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Alantolactone is a sesquiterpene lactone that has been found in *Inula* species and has diverse biological activities.[1-3] It inhibits LPS-induced increases in nitric oxide, IL-6, and TNF-α production in RAW 246.7 cells by 76.09, 81.54, and 71.23%, respectively, when used at a concentration of 10 µM.[1] Alantolactone (40 µM) decreases cell viability, glutathione (GSH) levels, and the mitochondrial membrane potential, induces apoptosis, and increases generation of reactive oxygen species (ROS) in HepG2 cells.[2] It inhibits phosphorylation and nuclear translocation of STAT3 in MDA-MB-231 cells in a concentration-dependent manner.[3] Alantolactone (2.5 mg/kg) reduces tumor growth in an MDA-MB-231 mouse xenograft model.

References

1. Kumar, C., Kumar, A., Nalli, Y., *et al*. Design, synthesis and biological evaluation of alantolactone derivatives as potential anti-inflammatory agents. *Med. Chem. Res*. **28(1)**, 849-856 (2019).
2. Khan, M., Li, T., Khan, M.K.A., *et al*. Alantolactone induces apoptosis in HepG2 cells through GSH depletion, inhibition of STAT3 activation, and mitochondrial dysfunction. *Biomed Res. Int*. **2013(719858)**, 1-11 (2012).
3. Chun, J., Li, R.-J., Cheng, M.-S., *et al*. Alantolactone selectively suppresses STAT3 activation and exhibits potent anticancer activity in MDA-MB-231 cells. *Cancer Lett*. **357(1)**, 393-403 (2014).

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