



## Product Information

Product ID D1627

CAS No. 477-43-0

Chemical Name (3aS,6aR,9aR,9bS)-3,6,9-trimethylidene-3a,4,5,6a,7,8,9a,9b-octahydroazuleno[5,4-d]furan-2-one

Synonym

Formula C<sub>15</sub>H<sub>18</sub>O<sub>2</sub>

Formula Wt. 230.3

Melting Point

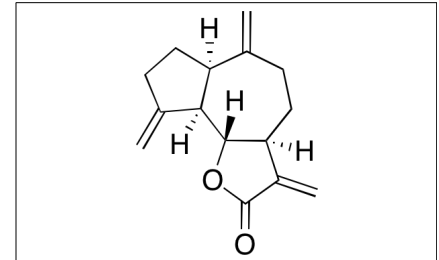
Purity ≥98%

Solubility

Store Temp -20° C

Ship Temp Ambient

**Description** Dehydrocostus lactone (DHL) is a sesquiterpene lactone originally found in species of *Saussurea*. DHL exhibits antibiotic, antioxidative, anti-angiogenic, anticancer chemotherapeutic, and chemopreventive activities. DHL displays antibacterial activity against species of *Mycobacterium*. In osteoblasts, DHL increases levels of NADPH, thioredoxin reductase, and phospho-CREB and decreases levels of nitrotyrosin, preventing mitochondrial dysfunction induced by antimycin A. In macrophages treated with LPS, DHL decreases expression of iNOS and TNF-α. Additionally, DHL activates cAMP-activated cystic fibrosis transmembrane conductance regulator (CFTR) Cl<sup>-</sup> channels in thyroid cells. In vitro and in vivo, this compound downregulates expression of cyclin D1, Akt, mTOR, and inhibits phosphorylation of GSK-3β, inducing G0/G1 phase cell cycle arrest and preventing capillary tube formation. In soft tissue sarcoma cell lines, DHL decreases expression of CDK2, p27, CDK1/cdc2, cyclin B1, and matrix metalloproteinases 2 and 9 (MMP2/9), inducing G2/M phase cell cycle arrest and inhibiting cell proliferation.



**Bulk quantities available upon request**

Product ID	Size
D1627	5 mg
D1627	10 mg
D1627	25 mg

**References** Wang X, Zhang YF, Yu B, et al. Dehydrocostuslactone, a sesquiterpene lactone activates wild-type and ΔF508 mutant CFTR chloride channel. *J Asian Nat Prod Res.* 2013;15(8):855-66. PMID: 23799322.

Lohberger B, Rinner B, Stuedl N, et al. Sesquiterpene lactones downregulate G2/M cell cycle regulator proteins and affect the invasive potential of human soft tissue sarcoma cells. *PLoS One.* 2013 Jun 14;8(6):e66300. PMID: 23799090.

Wang CY, Tsai AC, Peng CY, et al. Dehydrocostuslactone suppresses angiogenesis in vitro and in vivo through inhibition of Akt/GSK-3β and mTOR signaling pathways. *PLoS One.* 2012;7(2):e31195. PMID: 22359572.

Seo MS, Choi EM. The effects of dehydrocostus lactone on osteoblastic MC3T3-E1 cells in redox changes and PI3K/Akt/CREB. *Immunopharmacol Immunotoxicol.* 2012 Oct;34(5):810-4. PMID: 22324303.

Choi EM. Dehydrocostus lactone prevents mitochondrial dysfunction in osteoblastic MC3T3-E1 cells. *Eur J Pharmacol.* 2011 Aug 16;664(1-3):1-7. PMID: 21596031.

Luna-Herrera J, Costa MC, González HG, et al. Synergistic antimycobacterial activities of sesquiterpene lactones from *Laurus* spp. *J Antimicrob Chemother.* 2007 Mar;59(3):548-52. PMID: 17218447.

Lee HJ, Kim NY, Jang MK, et al. A sesquiterpene, dehydrocostus lactone, inhibits the expression of inducible nitric oxide synthase and TNF-alpha in LPS-activated macrophages. *Planta Med.* 1999 Mar;65(2):104-8. PMID: 10193198.

**Caution:** This product is intended for laboratory and research use only. It is not for human or drug use.