



LKT Laboratories, Inc.

Cantharidin

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Product Information

Product ID C0255

CAS No. 56-25-7

Chemical Name

Synonym

Formula $C_{10}H_{12}O_4$

Formula Wt. 196.20

Melting Point 212°C

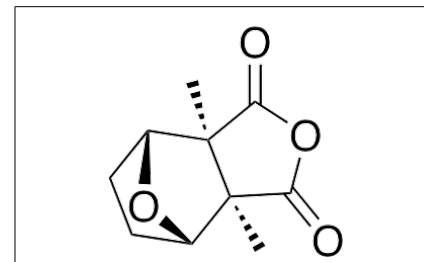
Purity ≥98%

Solubility

Store Temp Ambient

Ship Temp Ambient

Description Cantharidin is a toxin initially produced by the blister beetle, *Canarthis vesicatoria*. Cantharidin competitively inhibits serine/threonine phosphatases such as protein phosphatase 1 (PP1) and protein phosphatase 2A (PP2A). Cantharidin exhibits anticancer and anti-resorptive activities. In cancer cells, cantharidin upregulates expression of caspase 1 and the NGF receptor and downregulates expression of Bcl-2-like protein 10, Fas ligand, and TNF- α . In colorectal cancer cells, cantharidin inhibits heat shock factor 1 and downstream HSP70- and BAG3-related signaling, inhibiting cell proliferation. Additionally, cantharidin displays pro-inflammatory activity in vivo, producing increases in MCP-1, IL-6, IL-1 β , and myeloperoxidase. In vitro, this compound inhibits RANKL-induced expression of Fra-2 and cathepsin K and inhibits activation of ERK and MAPK signaling; these actions result in inhibition of differentiation and resorptive activity.



Bulk quantities available upon request

Product ID	Size
C0255	25 mg
C0255	100 mg
C0255	500 mg

References Chen X, Liu J, Zhang Y. Cantharidin impedes the activity of protein serine/threonine phosphatase in *Plutella xylostella*. *Mol Biosyst.* 2013 Nov 19. [Epub ahead of print]. PMID: 24253262.

Kadioglu O, Kermani NS, Kelter G, et al. Pharmacogenomics of Cantharidin in Tumor Cells. *Biochem Pharmacol.* 2013 Nov 11. pii: S0006-2952(13)00709-0. Epub ahead of print]. PMID: 24231507.

Kim JA, Kim Y, Kwon BM, et al. The natural compound cantharidin induces cancer cell death through inhibition of heat shock protein 70 (HSP70) and Bcl-2-associated athanogene domain 3 (BAG3) expression by blocking heat shock factor 1 (HSF1) binding to promoters. *J Biol Chem.* 2013 Oct 4;288(40):28713-26. PMID: 23983126.

Ivetic Tkalcovic V, Hrvacic B, Bosnar M, et al. Cantharidin-induced inflammation in mouse ear model for translational research of novel anti-inflammatories. *Transl Res.* 2012 Aug;160(2):137-45. PMID: 22677362.

Kim MH, Shim KS, Kim SH. Inhibitory effect of cantharidin on osteoclast differentiation and bone resorption. *Arch Pharm Res.* 2010 Mar;33(3):457-62. PMID: 20361312.

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