



LKT Laboratories, Inc.

Plumbagin

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## Product Information

Product ID P4780

CAS No. 481-42-5

Chemical Name

Synonym

Formula  $C_{11}H_8O_3$

Formula Wt. 188.18

Melting Point

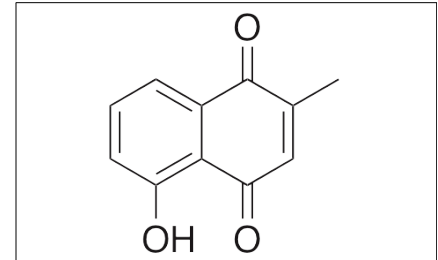
Purity  $\geq 98\%$

Solubility

Store Temp Ambient

Ship Temp Ambient

**Description** Plumbagin is a naphthoquinone found in a variety of *Plumbago* species; it exhibits anticancer, anti-inflammatory, antibacterial, and anti-diabetic activities. In cellular models of cancer, plumbagin increases reactive oxygen species production, increases the Bax/Bcl-2 ratio, inhibits activation of NF- $\kappa$ B, and increases caspase activity, inducing apoptosis. In an in vivo model of ulcerative colitis, plumbagin decreases levels of pro-inflammatory cytokines such as TNF- $\alpha$ , IL-17, and IFN- $\gamma$ , and also decreases colonic monocyte aggregation. This compound also inhibits the assembly and GTPase activity of FtsZ, which plays a significant role in bacterial cell division, inhibiting proliferation in vitro. Additionally, plumbagin inhibits TGF- $\beta$ 1-induced fibronectin and collagen IV expression in vitro and reverses diabetic nephropathy via alterations in Nox4 signaling in diabetic mice.



## Pricing and Availability

*Bulk quantities available upon request*

Product ID	Size	List Price
P4780	100 mg	\$40.10
P4780	250 mg	\$50.80
P4780	1 g	\$131.00

**References** Sagar S, Esau L, Moosa B, et al. Cytotoxicity and Apoptosis Induced by a Plumbagin Derivative in Estrogen Positive MCF-7 Breast Cancer Cells. *Anticancer Agents Med Chem.* 2013 Oct 21. [Epub ahead of print]. PMID: 24164046.

Yong R, Chen XM, Shen S, et al. Plumbagin ameliorates diabetic nephropathy via interruption of pathways that include NOX4 signalling. *PLoS One.* 2013 Aug 26;8(8):e73428. PMID: 23991195.

Qiu JX, He YQ, Wang Y, et al. Plumbagin induces the apoptosis of human tongue carcinoma cells through the mitochondria-mediated pathway. *Med Sci Monit Basic Res.* 2013 Aug 28;19:228-36. PMID: 23982457.

Bhattacharya A, Jindal B, Singh P, et al. Plumbagin inhibits cytokinesis in *Bacillus subtilis* by inhibiting FtsZ assembly--a mechanistic study of its antibacterial activity. *FEBS J.* 2013 Sep;280(18):4585-99. PMID: 23841620.

Pile JE, Navalta JW, Davis CD, et al. Interventional effects of plumbagin on experimental ulcerative colitis in mice. *J Nat Prod.* 2013 Jun 28;76(6):1001-6. PMID: 23742275.

Xu TP, Shen H, Liu LX, et al. Plumbagin from *Plumbago Zeylanica* L induces apoptosis in human non-small cell lung cancer cell lines through NF- $\kappa$ B inactivation. *Asian Pac J Cancer Prev.* 2013;14(4):2325-31. PMID: 23725135.

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