



LKT Laboratories, Inc.

Withaferin A

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Product Information

Product ID W3576

CAS No. 5119-48-2

Chemical Name

Synonym

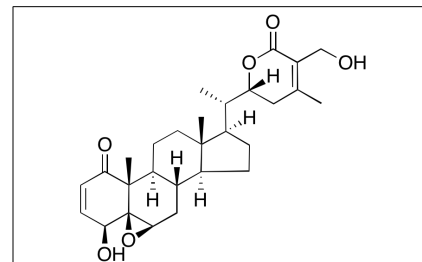
Formula $C_{28}H_{38}O_6$

Formula Wt. 470.6

Melting Point 241-245°C

Purity ≥98%

Solubility Methanol, Ethanol, DMSO



Pricing and Availability

Bulk quantities available upon request

Product ID	Size	List Price
W3576	1 mg	\$90.20
W3576	5 mg	\$270.50

Store Temp 4°C

Ship Temp Ambient

Description Withaferin A is a steroid lactone initially produced by *Withania somnifera* that exhibits anticancer chemotherapeutic, chemopreventive, and anti-inflammatory activities. Withaferin A inhibits vimentin, an intermediate filament, preventing breast cancer cell growth in vitro and in vivo. Withaferin A also increases phosphorylation of JNK, ERK, and p38 MAPK and increases levels of Mcl-1, inducing apoptosis in other in vitro models of breast cancer. Across other breast cancer cell lines, withaferin A increases activation of p53, downregulates expression of ERα, and activates Notch2 and Notch4, inhibiting cellular migration and growth. In ovarian cancer cells, withaferin A downregulates expression of Notch1, Notch3, chc25C, Akt, and Bcl-2, inhibiting growth and colony formation. Withaferin A also inhibits tumor growth of pancreatic xenografts in vivo through ATP-independent inhibition of heat shock protein 90 (HSP90). Additionally, this compound inhibits phosphorylation of IκB kinase, activation of NF-κB, and decreases levels of NO and iNOS in vitro.

References Antony ML, Lee J, Hahm ER, et al. Growth Arrest by the Antitumor Steroidal Lactone Withaferin A in Human Breast Cancer Cells Is Associated with Downregulation and Covalent Binding at Cysteine-303 of β-Tubulin. *J Biol Chem*. 2013 Dec 2. [Epub ahead of print]. PMID: 24297176.

Hahm ER, Lee J, Singh SV. Role of mitogen-activated protein kinases and Mcl-1 in apoptosis induction by withaferin A in human breast cancer cells. *Mol Carcinog*. 2013 Sep 9. [Epub ahead of print]. PMID: 24019090.

Lee J, Sehrawat A, Singh SV. Withaferin A causes activation of Notch2 and Notch4 in human breast cancer cells. *Breast Cancer Res Treat*. 2012 Nov;136(1):45-56. PMID: 22965833.

Zhang X, Samadi AK, Roby KF, et al. Inhibition of cell growth and induction of apoptosis in ovarian carcinoma cell lines CaOV3 and SKOV3 by natural withanolide Withaferin A. *Gynecol Oncol*. 2012 Mar;124(3):606-12. PMID: 22188785.

Hahm ER, Lee J, Huang Y, et al. Withaferin a suppresses estrogen receptor-α expression in human breast cancer cells. *Mol Carcinog*. 2011 Aug;50(8):614-24. PMID: 21432907.

Yu Y, Hamza A, Zhang T, et al. Withaferin A targets heat shock protein 90 in pancreatic cancer cells. *Biochem Pharmacol*. 2010 Feb 15;79(4):542-51. PMID: 19769945.

Oh JH, Lee TJ, Park JW, et al. Withaferin A inhibits iNOS expression and nitric oxide production by Akt inactivation and down-

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