



LKT Laboratories, Inc.

Doxycycline Monohydrate

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Product Information

Product ID D5898

CAS No. 17086-28-1

Chemical Name [4S-(4 α ,4 α ,5 α ,5 α ,6 α ,12 α)]-4-(Dimethylamino)-1,-4,4a,5,5a,6,11,12a-octahydro-3,5,10,12,12a-penta-hydroxy-6-methyl-1,11-dioxo-2-naphthacene-carboxamide monohydrate

Synonym Doxycycline, Jenacyclin, Supracyclin, Vibramycin

Formula C₂₂H₂₄N₂O₈ · H₂O

Formula Wt. 462.45

Melting Point 201 °C

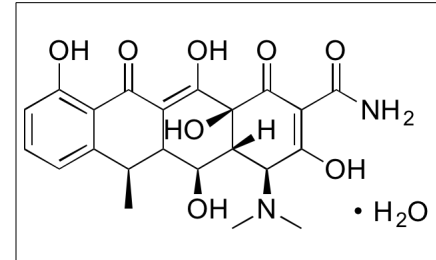
Purity ≥97%

Solubility Soluble in ethanol (2 mg/mL) or methanol.

Store Temp Ambient

Ship Temp Ambient

Description Doxycycline is a tetracycline antibiotic that exhibits anti-parasitic, anti-helminthic, anti-inflammatory, anticancer, and anti-metastatic activities. Doxycycline exerts its antibacterial activity through binding 16S rRNA of the bacterial 30S ribosome, preventing binding of aminoacyl-tRNA to the ribosomal A site, inhibiting translation. Doxycycline also inhibits matrix metalloproteinases (MMPs). Doxycycline displays slow antimalarial benefit, inhibiting expression of the apicoplast genome and inducing loss of function in parasites. This compound inhibits *Wolbachia* endosymbionts from *Wuchereria*, inducing sterilization and inhibiting growth. Doxycycline improves pulmonary function and parameters of chronic obstructive pulmonary syndrome (COPD) in clinical settings. Additionally, doxycycline inhibits migration and proliferation of breast adenocarcinoma cells. Doxycycline also attenuates the development of cardiac hypertrophy in vivo and displays anti-allergic and anti-asthma benefits, suppressing activation of IgE and upregulating expression of IL-2.



Bulk quantities available upon request

Product ID	Size
D5898	1 g
D5898	5 g
D5898	10 g
D5898	25 g

References Joks R, Durkin HG. Non-antibiotic properties of tetracyclines as anti-allergy and asthma drugs. *Pharmacol Res.* 2011 Dec;64(6):602-9. PMID: 21501686.

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Dahl EL, Shock JL, Shenai BR, et al. Tetracyclines specifically target the apicoplast of the malaria parasite *Plasmodium falciparum*. *Antimicrob Agents Chemother.* 2006 Sep;50(9):3124-31. PMID: 16940111.

Hoerauf A, Mand S, Fischer K, et al. Doxycycline as a novel strategy against bancroftian filariasis-depletion of *Wolbachia* endosymbionts from *Wuchereria bancrofti* and stop of microfilaria production. *Med Microbiol Immunol.* 2003 Nov;192(4):211-6. PMID: 12684759.

Dursun D, Kim MC, Solomon A, et al. Treatment of recalcitrant recurrent corneal erosions with inhibitors of matrix metalloproteinase-9, doxycycline and corticosteroids. *Am J Ophthalmol.* 2001 Jul;132(1):8-13. PMID: 11438047.

Fife RS, Sledge GW Jr. Effects of doxycycline on in vitro growth, migration, and gelatinase activity of breast carcinoma cells. *J*

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