

Product Name: Doxycycline hyclate

Catalog No.: 4090

Batch No.: 5

CAS Number: 24390-14-5

IUPAC Name: (4S,4aR,5S,5aR,6R,12aS)-4-(Dimethylamino)-3,5,10,12,12a-pentahydroxy-6-methyl-1,11-dioxo-1,4,4a,5,5a,6,11,12a-octahydrotetracene-2-carboxamide hydrochloride hemimethanolate hemihydrate

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: C₂₂H₂₄N₂O₈.HCl.0.5C₂H₆O.0.5H₂O

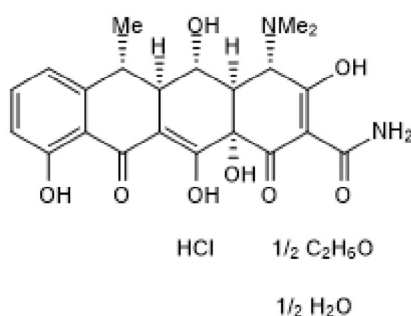
Batch Molecular Weight: 512.94

Physical Appearance: Yellow solid

Solubility: water to 100 mM
DMSO to 100 mM

Storage: Store at +4°C

Batch Molecular Structure:



2. ANALYTICAL DATA

HPLC: Shows 100.0% purity

¹H NMR: Consistent with structure

Mass Spectrum: Consistent with structure

Optical Rotation: [α]_D = -95.7 (Concentration = 1, Solvent =)

Microanalysis:

	Carbon	Hydrogen	Nitrogen
Theoretical	53.86	5.7	5.46
Found	53.69	5.49	5.47

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Description:

Doxycycline hyclate is a broad-spectrum antibiotic and MMP inhibitor; tetracycline derivative. Doxycycline hyclate increases and promotes smooth muscle cell adhesion; inhibits proliferation and migration. Protects the microvasculature by inhibiting plasminogen systems. For more information about how Doxycycline hyclate may be used, see our protocols: Transdifferentiating Fibroblasts into Neurons, Reprogramming MEFs into Skeletal Muscle Progenitors. Please see product specific page on www.tocris.com for full description.

Physical and Chemical Properties:

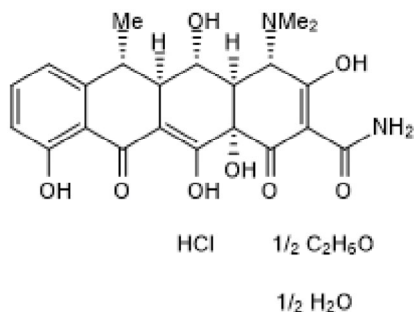
Batch Molecular Formula: C₂₂H₂₄N₂O₈.HCl.0.5C₂H₆O.0.5H₂O

Batch Molecular Weight: 512.94

Physical Appearance: Yellow solid

Minimum Purity: ≥92%

Batch Molecular Structure:



Storage: Store at +4°C

Solubility & Usage Info:

water to 100 mM

DMSO to 100 mM

Stability and Solubility Advice:

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a 45-60°C water bath).

Information concerning product stability, particularly in solution, has rarely been reported and in most cases we can only offer a general guide. *Unless contradicted by product-specific protocols or instructions, our standard recommendations apply:

SOLIDS: Provided storage is as stated on the product label and the vial is kept tightly sealed, the product can be stored for up to 6 months from date of receipt.

SOLUTIONS: We recommend that stock solutions, once prepared, are stored aliquoted in tightly sealed vials at -20°C or below and used within 1 month. Wherever possible solutions should be made up and used on the same day.

References:

Wernig et al (2008) A drug-inducible transgenic system for direct reprogramming of multiple somatic cell types. *Nat.Biotechnol.* **26** 916. PMID: 18594521.

Burggraf et al (2007) Doxycycline inhibits MMPs via modulation of plasminogen activators in focal cerebral ischemia. *Neurobiol.Dis.* **25** 506. PMID: 17166729.

Franco et al (2006) Doxycycline alters vascular smooth muscle cell adhesion, migration, and reorganization of fibrillar collagen matrices. *Am.J.Pathol.* **168** 1697. PMID: 16651635.

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