

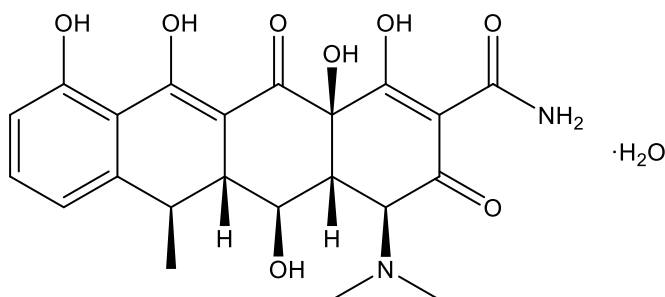
**Catalog # 10-3765**

**Doxycycline monohydrate**

CAS# 17086-28-1

(4S,4aS,5S,5aR,6R,12aS)-4-(Dimethylamino)-1,4,4a,5,5a,6,11,12a-octahydro-3,5,10,12,12a-pentahydroxy-6-methyl-1,11-dioxo-2-naphthacenecarboxamide monohydrate

Lot # X103721



A broad-spectrum tetracycline antibiotic.<sup>1</sup> Inhibits matrix metalloproteases.<sup>2</sup> Promotes wound repair by inhibiting collagen degradation in rat models.<sup>3</sup> Displays neuroprotective effects in neurodegenerative diseases.<sup>4</sup> Frequently used in doxycycline-controlled transcriptional activation systems for regulation of gene expression in cell culture and organisms.<sup>5,6</sup>

- 1) Riond and Riviere (1988), *Pharmacology and toxicology of doxycycline*; Vet. Hum. Toxicol. **30** 431
- 2) Smith *et al.* (1999), *Specificity of inhibition of matrix metalloproteinase activity by doxycycline: Relationship to structure of the enzyme*; Arthritis Rheum. **42** 1140
- 3) Lamparter *et al.* (2002), *Doxycycline and tissue repair in rats*; J. Lab. Clin. Med. **139** 295
- 4) Santa-Cecilia *et al.* (2019), *The Neuroprotective Effect of Doxycycline on Neurodegenerative Diseases*; Neurotox. Res. **35** 981
- 5) Gossin *et al.* (1995), *Transcriptional activation by tetracyclines in mammalian cells*; Science **268** 1766
- 6) Li *et al.* (2013), *Simple piggyBac transposon-based mammalian cell expression system for inducible protein production*; Proc. Natl. Acad. Sci. USA **110** 5004

**PHYSICAL DATA**

Molecular Weight:	462.46
Molecular Formula:	C <sub>22</sub> H <sub>24</sub> N <sub>2</sub> O <sub>8</sub> ·H <sub>2</sub> O
Purity:	>98% by TLC
	NMR: (Conforms)
Solubility:	DMSO (50 mg/ml) or Water (14 mg/ml with warming)
Physical Description:	Pale yellow solid
Storage and Stability:	Store as supplied desiccated at -20°C for up to 1 year from the date of purchase. Solutions in DMSO or water may be stored at -20°C for up to 3 months.

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