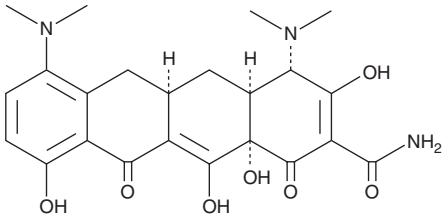
PRODUCT INFORMATION

Minocycline (hydrochloride hydrate)

Item No. 14454

Formal Name: (4S,12aS)-4,7-*bis*(dimethylamino)-1,4,4aS,5,5aR,6,11,12a-octahydro-3,10,12,12a-tetrahydroxy-1,11-dioxo-2-naphthacenecarboxamide, monohydrochloride hydrate
Synonym: NSC 141993
MF: $C_{23}H_{27}N_3O_7$ • HCl [XH_2O]
FW: 493.9
Purity: ≥98%
UV/Vis.: λ_{max}: 257, 342 nm
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥4 years



• HCl [XH_2O]

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Minocycline (hydrochloride hydrate) is supplied as a crystalline solid. A stock solution may be made by dissolving the minocycline (hydrochloride hydrate) in the solvent of choice, which should be purged with an inert gas. Minocycline (hydrochloride hydrate) is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of minocycline (hydrochloride hydrate) in these solvents is approximately 5 and 10 mg/ml, respectively.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of minocycline (hydrochloride hydrate) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of minocycline (hydrochloride hydrate) in PBS, pH 7.2, is approximately 1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Minocycline is a broad-spectrum tetracycline antibiotic.[1] It is active against *E. faecium in vitro* (MIC = 16 mg/L). Minocycline (20 mg/kg every 12 hours) reduces the number of bacteria in the lung in a mouse model of multidrug resistant *A. baumannii*-induced pneumonia.[2] It reduces spinal cord lesion size and improves hindlimb function post-injury in a mouse model of acute spinal cord injury when administered at an initial dose of 50 mg/kg and subsequent doses of 25 mg/kg per day for 5 days.[3] Formulations containing minocycline have been used in the treatment of acne vulgaris.

References

1. Boukthir, S., Dejoies, L., Zouari, A., *et al.* In vitro activity of eravacycline and mechanisms of resistance in enterococci. *Int. J. Antimicrob. Agents* **56(6)**, 106215 (2020).
2. Ku, N.S., Lee, S.-H., Lim, Y.-S., *et al. In vivo* efficacy of combination of colistin with fosfomycin or minocycline in a mouse model of multidrug-resistant *Acinetobacter baumannii* pneumonia. *Sci. Rep.* **9(1)**, 17127 (2019).
3. Wells, J.E.A., Hurlbert, R.J., Fehlings, M.G., *et al.* Neuroprotection by minocycline facilitates significant recovery from spinal cord injury in mice. *Brain* **126(Pt 7)**, 1628-1637 (2003).

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