

Product Name:	Minocycline hydrochloride
Product Number:	M008
CAS Number:	13614-98-7
Molecular Formula:	$C_{23}H_{27}N_3O_7 \cdot HCl$
Molecular Weight:	493.94
Form:	Powder
Appearance:	Yellow crystalline powder
Solubility:	Freely soluble in water. Slightly soluble in alcohol.
Source:	Synthetic
Water Content (Karl Fischer):	4.3-8.0%
pH:	3.5-4.5
Storage Conditions:	2-8°C
Description:	Minocycline Hydrochloride is the hydrochloride salt of Minocycline, a broad-spectrum tetracycline patented in 1961 by Pfizer and came into commercial use in 1971. It inhibits bacterial protein synthesis. It has been found to inhibit PARP1 and nitric oxide synthase. It is a n NMDA receptor antagonist and has neuroprotective effects. It also has chondroprotective effects in inflammatory models of arthritis. Minocycline Hydrochloride is freely soluble in in water. It is slightly soluble in alcohol.
Mechanism of Action:	Tetracyclines inhibit bacterial protein synthesis by entering the cell and binding to the 30s ribosomal subunit preventing binding of tRNA. Minocycline acts as a PARP1 inhibitor. It can also indirectly inhibit inducible nitric oxide synthase.
Spectrum:	Minocycline Hydrochoride has a broad spectrum of activity against Gram-negative and Gram-positive bacteria which cause infections of the upper respiratory tract. It can be used for MRSA.
Microbiology Applications	Minocycline Hydrochloride is commonly used in clinical <i>in vitro</i> microbiological antimicrobial susceptibility tests (panels, discs, and MIC strips) against Gram-positive and Gram-negative microbial isolates. Medical microbiologists use AST results to recommend antibiotic treatment options. Representative MIC values include: • <i>Neisseria meningitidis</i> 0.06 µg/mL - 0.12 µg/mL • <i>Streptococcus pneumoniae</i> 0.03 µg/mL - 8 µg/mL • For a complete list of Minocycline MIC values, click here.

References:

Amin AR et al (1996) A novel mechanism of action of tetracyclines: Effects on nitric oxide synthases. *Proc. Natl. Acad. Sci. USA* 93(24):14014-14019 PMID 8943052

Chopra I and Marilyn Roberts M (2001) Tetracycline antibiotics: Mode of action, applications, molecular biology, and epidemiology of bacterial resistance. *Microbiol. and Molec. Biol. Rev.* 65(2): 232-260 PMID 11381101

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