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ProductInformation

Minocycline hydrochloride

Product Number **M 9511**
Storage Temperature 2-8 °C

Product Description

Molecular Formula: $C_{23}H_{27}N_3O_7 \cdot HCl$
Molecular Weight: 493.9
CAS Number: 13614-98-7
Synonyms: [4S-(4α,4aα5,5aα,12aα)]-4,7-bis(dimethylamino)-14,4a,5,5a,6,11,12a-octahydro-3,10,12,12a-tetrahydroxy-1,11-dioxo-2-naphthacenecarboxamide; 7-dimethylamino-6-demethyl-6-deoxytetracycline[1]

Minocycline is a semi-synthetic tetracycline derivative that has a spectrum of antibacterial activity similar to tetracycline. It is active against streptococci, enterobacteria, and some mycobacteria, and also against such species as *Staphylococcus aureus*, *Neisseria meningitidis*, *Acinetobacter*, *Bacteroides*, *Haemophilus*, and *Nocardia*. Minimum inhibitory concentrations (MIC) can range from 0.06 - 1 µg/ml for the most sensitive organisms, and from 4 - 12.5 µg/ml for moderately sensitive organisms.[1,2] A detailed review of minocycline has been published.[3]

Minocycline has been shown to inhibit tumor growth in transgenic mice, in combination with AGM-1470 and interferon α/β.[4] Minocycline has also been demonstrated to inhibit angiogenesis in rabbit cornea in the presence of the VX2 carcinoma.[5] The inhibitory activity of minocycline against several metalloproteinases has been studied.[6]

An HPLC assay for the analysis of minocycline in serum and tissue has been published.[7]

Preparation Instructions

This product is soluble water (50 mg/ml), with heat as needed, yielding a clear, yellow to amber solution. It is also soluble in DMSO (7 mg/ml).

Storage/Stability

Stock solutions of this product (1 mg/ml, 0.1 N HCl) may be stored for two days at 4 °C.

References

1. The Merck Index, 12th ed., Entry# 1188.
2. Martindale The Extra Pharmacopoeia, 31st ed., Reynolds, J. E. F., ed., Royal Pharmaceutical Society (London, UK: 1996), pp. 829-830.
3. Zbinovsky, V., & Chrekian, G. P., in Anal. Prof of Drug Substances, **6**, Academic Press (New York, NY: 1977), pp. 323-339.
4. Parangi, S., et al., Antiangiogenic therapy of transgenic mice impairs *de novo* tumor growth. Proc. Natl. Acad. Sci. USA, **93**, 2002-2007 (1996).
5. Tamargo, R., et al., Angiogenesis inhibition by minocycline. Cancer Res., **51**, 672-675 (1991).
6. Gilbertson-Beadling, S., et al., The tetracycline analogs minocycline and doxycycline inhibit angiogenesis *in vitro* by a non-metalloproteinase-dependent mechanism. Cancer Chemother. Pharmacol., **36(5)**, 418-424, and **37(1-2)**, 194 (erratum) (1995).
7. Wrightson, W. R., et al., Analysis of minocycline by high-performance liquid chromatography in tissue and serum. J. Chromatogr. B Biomed. Sci. Appl., **706(2)**, 358-361 (1998).

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Precautions and Disclaimer