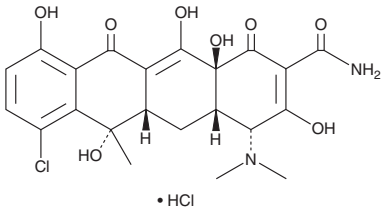
PRODUCT INFORMATION

4-*epi*-Chlortetracycline (hydrochloride)

Item No. 16663

CAS Registry No.: 101342-45-4
Formal Name: (4R,6S)-7-chloro-4-(dimethylamino)-1,4,4aS,5,5aS,6,11,12a-octahydro-3,6,10,12,12aS-pentahydroxy-6-methyl-1,11-dioxo-2-naphthacenecarboxamide, monohydrochloride
Synonym: 7-chloro-2-Naphthacenecarboxamide
MF: $C_{22}H_{23}ClN_2O_8 \bullet HCl$
FW: 515.3
Purity: ≥80%
UV/Vis.: λ_{max}: 235, 255, 375 nm
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥4 years



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

Laboratory Procedures

4-*epi*-Chlortetracycline (hydrochloride) is supplied as a crystalline solid. A stock solution may be made by dissolving the 4-*epi*-chlortetracycline (hydrochloride) in the solvent of choice, which should be purged with an inert gas. 4-*epi*-Chlortetracycline (hydrochloride) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of 4-*epi*-chlortetracycline (hydrochloride) in these solvents is approximately 2, 20, and 12 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 4-*epi*-chlortetracycline (hydrochloride) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of 4-*epi*-chlortetracycline (hydrochloride) in PBS (pH 7.2) is approximately 0.25 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Chlortetracycline is an analog of tetracycline (Item No. 14328), a broad spectrum antibiotic. In addition to its actions against microorganisms, chlortetracycline suppresses inflammation by inhibiting neutrophil action and other aspects of the innate immune response.[1-4] 4-*epi*-Chlortetracycline is an epimer of chlortetracycline.

References

1. Elferink, J.G. and Deierkauf, M. Inhibition of polymorphonuclear leukocyte functions by chlortetracycline. *Biochem. Pharmacol.* **33(22)**, 3667-3673 (1984).
2. Akunda, J.K., Johnson, E., Ahrens, F.A., *et al.* Chlortetracycline modulates acute phase response of ex vivo perfused pig livers, and inhibits TNF-α secretion by isolated Kupffer cells. *Comp. Immunol. Microbiol. Infect. Dis.* **24(2)**, 81-89 (2001).
3. Häyrinen-Immonen, R., Sorsa, T., Pettilä, J., *et al.* Effect of tetracyclines on collagenase activity in patients with recurrent aphthous ulcers. *J. Oral Pathol. Med.* **23(6)**, 269-272 (1994).
4. Rasmussen, B., Noller, H.F., Daubresse, G., *et al.* Molecular basis of tetracycline action: Identification of analogs whose primary target is not the bacterial ribosome. *Antimicrob. Agents Chemother.* **35(11)**, 2306-2311 (1991).

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