

# PRODUCT INFORMATION



## Tiamulin (fumarate)

Item No. 21216

**CAS Registry No.:** 55297-96-6  
**Formal Name:** 2-[[2-(diethylamino)ethyl]thio]-acetic acid, (3aS,4R,5S,6S,8R,9S,9aR,10R)-6-ethenyldecahydro-5-hydroxy-4,6,9,10-tetramethyl-1-oxo-3a,9-propano-3aH-cyclopentacycloocten-8-yl ester, 2E-butenedioate

**Synonyms:** 81723 Hfu, SQ 22,947

**MF:** C<sub>28</sub>H<sub>47</sub>NO<sub>4</sub>S • C<sub>4</sub>H<sub>4</sub>O<sub>4</sub>

**FW:** 609.8

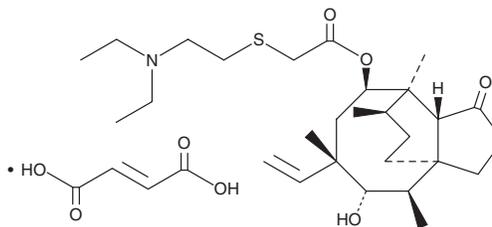
**Purity:** ≥95%

**UV/Vis.:** λ<sub>max</sub>: 208 nm

**Supplied as:** A crystalline solid

**Storage:** Room temperature

**Stability:** ≥4 years



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

### Laboratory Procedures

Tiamulin (fumarate) is supplied as a crystalline solid. A stock solution may be made by dissolving the tiamulin (fumarate) in the solvent of choice, which should be purged with an inert gas. Tiamulin (fumarate) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of tiamulin (fumarate) in these solvents is approximately 1, 15, and 30 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 tiamulin (fumarate) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of tiamulin (fumarate) in PBS (pH 7.2) is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

### Description

Tiamulin is a pleuromutilin antibiotic.<sup>1</sup> It is active against *M. gallisepticum*, *M. synoviae*, *M. iowae*, *M. hyopneumoniae*, *M. hyosynoviae*, *M. hyorhinis*, *M. bovis*, and *M. agalactiae* (MICs = 0.0025-0.25 µg/ml). Tiamulin is also active against various Gram-positive bacteria, including methicillin-resistant *S. aureus* (MRSA).<sup>2</sup> Tiamulin binds to the peptidyl transferase in the 50S ribosomal subunit to inhibit protein synthesis. Formulations containing tiamulin have been used in the treatment of veterinary enteric diseases and enzootic pneumonia.

### References

1. Hannan, P.C.T., Windsor, G.D., de Jong, A., *et al.* Comparative susceptibilities of various animal-pathogenic mycoplasmas to fluoroquinolones. *Antimicrob. Agents Chemother.* **41(9)**, 2037-2040 (1997).
2. Wilson, D.N. The A-Z of bacterial translation inhibitors. *Crit. Rev. Biochem. Mol. Biol.* **44(6)**, 393-433 (2009).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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