

Product Data Sheet

Product Name: Tildipirosin

Cat. No.: GC37793

Chemical Properties

Cas. No. 328898-40-4

SMILES O=C(/C=C/C(C)=C/[C@H](CN1CCCCC1)[C@@H](CC)O2)[C@H](C)C[C@H](CCN3CCCCC3)[C@H](OC4[C@@H](O)[C@@H](N(C)C)[C@H](O)[C@H](C)O4)[C@@H](C)[C@H](O)CC2=O

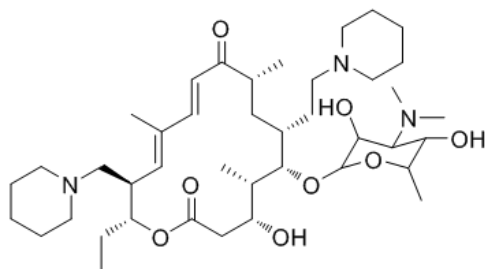
Formula $C_{41}H_{71}N_3O_8$ M.Wt 734.02

Solubility DMSO: ≥ 100 mg/mL (136.24 mM) Storage Store at -20°C

General tips For obtaining a higher solubility, please warm the tube at 37°C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution: ship with blue ice. All other available size: ship with RT, or blue ice upon request.

Structure



Protocol

Caution: Product has not been fully validated for medical applications. For research use only.

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**Animal
experiment:**

On day 0, each pen of 4 calves is randomly assigned by means of drawing numbers from a hat to receive 1 of 3 treatments; thus, each treatment group consists of 8 calves. Calves in group 1 receive tildipirosinb (4 mg/kg, SC), calves in group 2 receive tulathromycin (2.5 mg/kg, SC), and calves in group 3 receive saline (0.9% NaCl) solution (1 mL/45 kg, SC; control). The volume of saline solution administered to the calves in group 3 approximates the volume of the assigned antimicrobial administered to the calves of groups 1 and 2. On day 5, all calves are experimentally inoculated (challenged) with 10 mL of PBS solution supplemented with 5% bovine fetal serum containing 1.6×10^9 CFUs of H somni/mL instilled via a flexible bronchoalveolar lavage tube (length, 3 m; external diameter, 11 mm; internal diameter, 3 mm) that is passed through the nasal passage and nasopharynx to the level of the tracheal bifurcation. Proper placement of the tube at the tracheal bifurcation is verified on the basis of qualitative observations that include an elicited cough, absence of evidence of esophageal or ruminal placement as determined by smell and lack of tension and failure to observe the tube within the esophagus during placement, the presence of resistance at the carina, and the passage of the tube to a predetermined mark that approximates the distance from the nares to the carina. Following experimental inoculation, the tube is flushed with 60 mL of saline solution and 120 mL of air before it is removed from the calf. On day 8, all calves are weighed, sedated with xylazine (0.25 mg/kg), and transported in a trailer in groups of 4 to 6 calves. Immediately after euthanasia, a necropsy is performed on each calf.

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References:

- [1]. Rose M, et al. A microbiological assay to estimate the antimicrobial activity of parenteral tildipirosin against foodborne pathogens and commensals in the colon of beef cattle and pigs. J Vet Pharmacol Ther. 2016 Jun;39(3):277-86.
- [2]. Angell JW, et al. In vitro susceptibility of contagious ovine digital dermatitis associated Treponema spp. isolates to antimicrobial agents in the UK. Vet Dermatol. 2015 Dec;26(6):484-7, e114-5.
- [3]. Confer AW, et al. Clinical disease and lung lesions in calves experimentally inoculated with Histophilus somni five days after metaphylactic administration of tildipirosin or tulathromycin. Am J Vet Res. 2016 Apr;77(4):358-66.
- [4]. Michael GB, et al. Increased MICs of gamithromycin and tildipirosin in the presence of the genes erm(42) and msr(E)-mph(E) for bovine Pasteurella multocida and Mannheimia haemolytica. J Antimicrob Chemother. 2012 Jun;67(6):1555-7.

Background

Tildipirosin, a long-acting macrolide, has antibiotic activity.

Tildipirosin exhibits the inhibitory effect on C. coli species, and 23 of 31 (74%) isolates have MICs of 8 or 16 µg/mL while 8 of 31 (26%) have MIC >256 µg/mL. MICs against C. jejuni are 8-64 µg/mL. Tildipirosin against S. enterica and E. coli are 2-8 µg/mL[1]. Tildipirosin inhibits the treponeme isolates from CODD lesions from 19 sheep, with MIC90 of 0.0469 mg/L[3]. The P. multocida B130 clones show the MIC of 0.25 mg/L for tildipirosin. The 10 P. multocida isolates that carry only erm(42) exhibit MIC of 16-32 mg/L for tildipirosin. The single M. haemolytica that harbours only erm(42) shows MIC of 32 mg/L for tildipirosin[4].

The mean percentage of lung consolidation for tildipirosin (4 mg/kg, s.c.)-treated calves is significantly lower than those for tulathromycin-treated and control calves. Metaphylactic administration of tildipirosin to calves 5 days prior to H somni challenge prevents subsequent culture of the pathogen from bronchial secretions and is more effective in minimizing clinical disease and lung lesions than is metaphylactic administration of tulathromycin[2].

- [1]. Rose M, et al. A microbiological assay to estimate the antimicrobial activity of parenteral tildipirosin against foodborne pathogens and commensals in the colon of beef cattle and pigs. J Vet

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