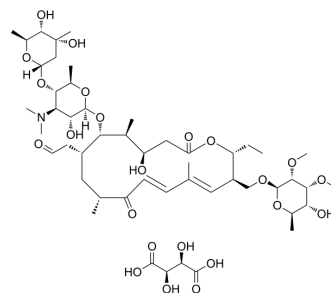


Tylosin tartrate

Cat. No.:	HY-B0519
CAS No.:	74610-55-2
Molecular Formula:	C ₅₀ H ₈₃ NO ₂₃
Molecular Weight:	1066.19
Target:	Bacterial; Antibiotic
Pathway:	Anti-infection
Storage:	4°C, sealed storage, away from moisture * In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



SOLVENT & SOLUBILITY

In Vitro

H₂O : ≥ 100 mg/mL (93.79 mM)
 DMSO : ≥ 100 mg/mL (93.79 mM)
 * "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Solvent Concentration	Mass		
		1 mg	5 mg	10 mg
	1 mM	0.9379 mL	4.6896 mL	9.3792 mL
	5 mM	0.1876 mL	0.9379 mL	1.8758 mL
	10 mM	0.0938 mL	0.4690 mL	0.9379 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

- Add each solvent one by one: PBS
Solubility: 100 mg/mL (93.79 mM); Clear solution; Need ultrasonic
- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
Solubility: ≥ 2.5 mg/mL (2.34 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
Solubility: ≥ 2.5 mg/mL (2.34 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil
Solubility: ≥ 2.5 mg/mL (2.34 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Tylosin tartrate is a macrolide antibiotic found naturally as a fermentation product of *Streptomyces fradiae*. Tylosin tartrate exerts potent antimicrobial activity against Gram-positive bacteria. Tylosin tartrate is widely used as a feed additive for promoting animal growth. Tylosin tartrate is used for veterinary purposes against bacterial dysentery and respiratory diseases in poultry, pigs and cattle^{[1][2][3]}.

IC₅₀ & Target	Macrolide								
In Vitro	Tylosin tartrate exerts antibacterial effects by binding to 23S rRNA of the bacterial ribosomal 50S subunit [1]. Tylosin tartrate also prevents growth of Gram-negative strains, with MICs of 64 µg/mL, 32 µg/mL, 512 µg/mL and 1 µg/mL for <i>M. haemolytica</i> 11935, <i>P. multocida</i> 4407, <i>E. coli</i> ATCC 25922 and <i>E. coli</i> AS19rlmA ¹ , respectively[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.								
In Vivo	<p>Tylosin tartrate (10-500 mg/kg; s.c.) generally suppresses the elevated TNF-α and IL-1β levels and increases the IL-10 levels in the Lipopolysaccharide (LPS) -treated animals[4].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <table border="1"> <tr> <td>Animal Model:</td> <td>Balb/C mice (2-3 months old, 20-25 g)[4]</td> </tr> <tr> <td>Dosage:</td> <td>10 mg/kg, 100 mg/kg, 500 mg/kg</td> </tr> <tr> <td>Administration:</td> <td>Subcutaneous injection</td> </tr> <tr> <td>Result:</td> <td>Reduced the elevated TNF-α and IL-1β in LPS (250 µg)-treated mice but increased their IL-10 levels.</td> </tr> </table>	Animal Model:	Balb/C mice (2-3 months old, 20-25 g)[4]	Dosage:	10 mg/kg, 100 mg/kg, 500 mg/kg	Administration:	Subcutaneous injection	Result:	Reduced the elevated TNF-α and IL-1β in LPS (250 µg)-treated mice but increased their IL-10 levels.
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CUSTOMER VALIDATION

- Chemosphere. 2019 Jun;225:378-387.

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REFERENCES

- [1]. Niels Møller Andersen, et al. Inhibition of Protein Synthesis on the Ribosome by Tildipirosin Compared with Other Veterinary Macrolides. *Antimicrob Agents Chemother.* 2012 Nov; 56(11): 6033–6036.
- [2]. Ayse Er, et al. Effects of tylosin on serum cytokine levels in healthy and lipopolysaccharide-treated mice. *Acta Vet Hung.* 2010 Mar;58(1):75-81.
- [3]. Mingfu Liu, et al. Resistance to the macrolide antibiotic tylosin is conferred by single methylations at 23S rRNA nucleotides G748 and A2058 acting in synergy. *Proc Natl Acad Sci U S A.* 2002 Nov 12; 99(23): 14658–14663.
- [4]. Carlo Pinna, et al. In Vitro Evaluation of the Effects of Tylosin on the Composition and Metabolism of Canine Fecal Microbiota. *Animals (Basel).* 2020 Jan; 10(1): 98.

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

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