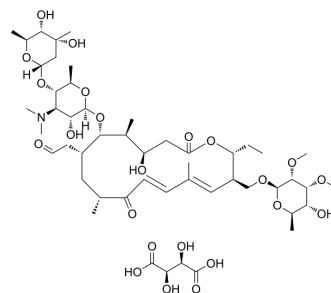


## Tylosin tartrate

Cat. No.:	HY-B0519
CAS No.:	74610-55-2
Molecular Formula:	C <sub>50</sub> H <sub>83</sub> NO <sub>23</sub>
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	H <sub>2</sub> O : ≥ 100 mg/mL (93.79 mM) DMSO : ≥ 100 mg/mL (93.79 mM) * "≥" means soluble, but saturation unknown.					
	Preparing Stock Solutions	<div>Solvent Concentration</div>	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	1. Add each solvent one by one: PBS Solubility: 100 mg/mL (93.79 mM); Clear solution; Need ultrasonic					
	2. 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					
	3. 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					
	4. Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: ≥ 2.5 mg/mL (2.34 mM); Clear solution					

### BIOLOGICAL ACTIVITY

Description	<p>Tylosin tartrate is a macrolide antibiotic found naturally as a fermentation product of <i>Streptomyces fradiae</i>. 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<sup>[1][2][3]</sup>.</p>
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IC <sub>50</sub> & Target	Macrolide								
In Vitro	<p>Tylosin tartrate exerts antibacterial effects by binding to 23S rRNA of the bacterial ribosomal 50S subunit <sup>[1]</sup>. 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<sup>1</sup>, respectively<sup>[3]</sup>. MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>								
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<sup>[4]</sup>. MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <table> <tr> <td>Animal Model:</td><td>Balb/C mice (2-3 months old, 20-25 g)<sup>[4]</sup></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) <sup>[4]</sup>	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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