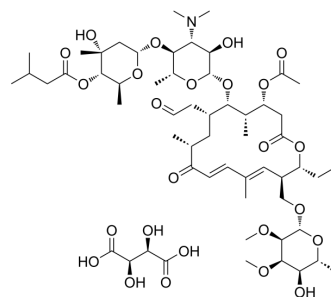


Tylvalosin tartrate

Cat. No.:	HY-128423
CAS No.:	63428-13-7
Molecular Formula:	C ₅₇ H ₉₃ NO ₂₅
Molecular Weight:	1192.34
Target:	Antibiotic; Bacterial; NF-κB; Apoptosis
Pathway:	Anti-infection; NF-κB; Apoptosis
Storage:	-20°C, stored under nitrogen
	* In solvent : -80°C, 6 months; -20°C, 1 month (stored under nitrogen)



SOLVENT & SOLUBILITY

In Vitro	DMSO : 100 mg/mL (83.87 mM; Need ultrasonic)					
		Solvent Concentration	Mass	1 mg	5 mg	10 mg
	Preparing Stock Solutions	1 mM	0.8387 mL	4.1934 mL	8.3869 mL	
		5 mM	0.1677 mL	0.8387 mL	1.6774 mL	
		10 mM	0.0839 mL	0.4193 mL	0.8387 mL	
Please refer to the solubility information to select the appropriate solvent.						
In Vivo	<ol style="list-style-type: none"> Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline Solubility: ≥ 2.5 mg/mL (2.10 mM); Clear solution Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline) Solubility: ≥ 2.5 mg/mL (2.10 mM); Clear solution Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: ≥ 2.5 mg/mL (2.10 mM); Clear solution 					

BIOLOGICAL ACTIVITY

Description	Tylvalosin (Acetylisovaleryltylosin) tartrate is an orally active, broad-spectrum macrolide antibiotic with antimicrobial activity. Tylvalosin tartrate is an antiviral agent useful in studying PRRSV infection. Tylvalosin tartrate induces apoptosis. Tylvalosin tartrate also has anti-inflammatory activity, relieves oxidative stress, and alleviates acute lung injury by inhibiting NF-κB activation ^{[1][2][3][4]} .
IC₅₀ & Target	Macrolide
In Vitro	Tylvalosin tartrate (10 μg/mL; 0.5, 1 h) increases caspase-3 cleavage in porcine neutrophils, leading to DNA fragmentation during apoptosis ^[4] .

Tylvalosin tartrate (0.1-10 µg/mL; 0.5 h) Promote endocytosis of porcine neutrophils by macrophages without changing phagocytosis [4].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Apoptosis Analysis^[4]

Cell Line:	Porcine neutrophils
Concentration:	0.1, 1.0, or 10 µg/mL
Incubation Time:	0.5, 1 h
Result:	Resulted induction of concentration- and time-dependent apoptosis in porcine monocyte-derived macrophages.

In Vivo

Tylvalosin tartrate (160 mg/kg; po; 7 d) can reduce the stress state of pigs during the immunization process with PRRSV inactivated vaccine and improve the health of pig^[5].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	PRRSV-free commercial breed piglets ^[5]
Dosage:	800 mg/kg Aivlosin (20% Tylvalosin Tartrate Premix)
Administration:	po; 7-14 days
Result:	Attenuated the increase in total white blood cells induced by immunization at day one post-immunization (DPI) and induced an increase in monocyte counts after seven DPI. Attenuate the reduction in the percentage of CD8+ T cells induced by PRRSV-inactivated vaccine immunization at seven DPI.

REFERENCES

[1]. Albert Philip Adrian Mockett, et al. Use of tylvalosin as antiviral agent. Patent. WO2008007104.

[2]. Zhao Z, et al. Tylvalosin exhibits anti-inflammatory property and attenuates acute lung injury in different models possibly through suppression of NF-κB activation. *Biochem Pharmacol.* 2014 Jul 1;90(1):73-87.

[3]. Zhang Q, et al. Tylvalosin Tartrate Improves the Health Status of Swine Herds during Immunization with Porcine Reproductive and Respiratory Syndrome Virus-Inactivated Vaccine. *Vet Sci.* 2022 Dec 25;10(1):12.

[4]. Moges R, et al. Anti-Inflammatory Benefits of Antibiotics: Tylvalosin Induces Apoptosis of Porcine Neutrophils and Macrophages, Promotes Efferocytosis, and Inhibits Pro-Inflammatory CXCL-8, IL1α, and LTB4 Production, While Inducing the Release of Pro-Resolving Lipoxin A4 and Resolvin D1. *Front Vet Sci.* 2018 Apr 11;5:57.

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

Tel: 609-228-6898

Fax: 609-228-5909

E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA