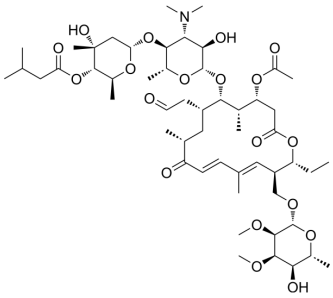
Tylvalosin

Cat. No.:	HY-128423A
CAS No.:	63409-12-1
Molecular Formula:	$C_{53}H_{87}NO_{19}$
Molecular Weight:	1042.25
Target:	NF-κB; Antibiotic; Bacterial; Apoptosis
Pathway:	NF-κB; Anti-infection; Apoptosis
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description

Tylvalosin (Acetylisovaleryltylo?sin) is an orally active, broad-spectrum macrolide antibiotic with antimicrobial activity. Tylvalosin is an antiviral agent used to study PRRSV infection. Tylvalosin induces apoptosis. Tylvalosin also has anti-inflammatory activity, alleviates oxidative stress, and alleviates acute lung injury by inhibiting NF-κB activation[1][2][3].

In Vitro

Tylvalosin (10 μg/mL; 0.5, 1 h) increases caspase-3 cleavage in porcine neutrophils, leading to DNA fragmentation during apoptosis[4].

Tylvalosin (0.1-10 μg/mL; 0.5 h) promotes 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].

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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]. 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.

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