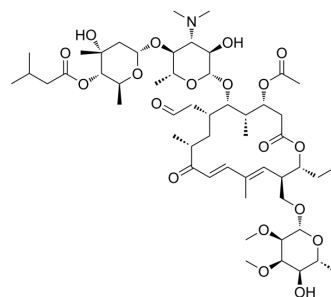


Tylvalosin

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:	Powder	-20°C	3 years
	In solvent	-80°C	6 months
		-20°C	1 month



BIOLOGICAL ACTIVITY

Description	Tylvalosin (Acetylisovaleryltlyo?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	<p>Tylvalosin (10 µg/mL; 0.5, 1 h) increases caspase-3 cleavage in porcine neutrophils, leading to DNA fragmentation during apoptosis^[4].</p> <p>Tylvalosin (0.1-10 µg/mL; 0.5 h) promotes endocytosis of porcine neutrophils by macrophages without changing phagocytosis^[4].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <p>Apoptosis Analysis^[4]</p> <table border="1"> <tr> <td>Cell Line:</td> <td>Porcine neutrophils</td> </tr> <tr> <td>Concentration:</td> <td>0.1, 1.0, or 10 µg/mL</td> </tr> <tr> <td>Incubation Time:</td> <td>0.5, 1 h</td> </tr> <tr> <td>Result:</td> <td>Resulted induction of concentration- and time-dependent apoptosis in porcine monocyte-derived macrophages.</td> </tr> </table>		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.
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In Vivo	<p>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].</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>PRRSV-free commercial breed piglets^[5]</td> </tr> <tr> <td>Dosage:</td> <td>800 mg/kg Aivosin (20% Tylvalosin Tartrate Premix)</td> </tr> <tr> <td>Administration:</td> <td>po; 7-14 days</td> </tr> <tr> <td>Result:</td> <td>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</td> </tr> </table>		Animal Model:	PRRSV-free commercial breed piglets ^[5]	Dosage:	800 mg/kg Aivosin (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
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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- κ B 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, IL1 α , 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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Caution: Product has not been fully validated for medical applications. For research use only.

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