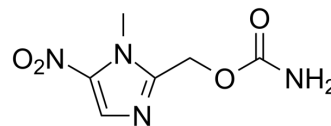


Ronidazole

Cat. No.:	HY-B0565		
CAS No.:	7681-76-7		
Molecular Formula:	C ₆ H ₈ N ₄ O ₄		
Molecular Weight:	200.15		
Target:	Parasite; Bacterial		
Pathway:	Anti-infection		
Storage:	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	2 years
		-20°C	1 year



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (499.63 mM; Need ultrasonic)
 H₂O : 4 mg/mL (19.99 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent Concentration	Mass		
		1 mg	5 mg	10 mg
	1 mM	4.9963 mL	24.9813 mL	49.9625 mL
	5 mM	0.9993 mL	4.9963 mL	9.9925 mL
	10 mM	0.4996 mL	2.4981 mL	4.9963 mL

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

In Vivo

- Add each solvent one by one: PBS
Solubility: 5 mg/mL (24.98 mM); Clear solution; Need ultrasonic and warming and heat to 60°C
- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
Solubility: ≥ 2.5 mg/mL (12.49 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
Solubility: ≥ 2.5 mg/mL (12.49 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil
Solubility: ≥ 2.5 mg/mL (12.49 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Ronidazole is a potent and orally active antiprotozoal and anti-microbial agent. Ronidazole acts as a veterinary agent against *Tritrichomonas foetus* in cats models. Ronidazole can be used the research of forhistomoniasis and swine dysentery^{[1][2][3]}.

In Vitro

Ronidazole (0.0625~0.25 μg/mL;48 hours) can effectively inhibit the growth of *C. difficile* all 24 strains^[2].

Ronidazole (0.3125 µg/mL, 1.25 µg/mL; 8 hours) can reduce the *C. difficile* bacteria count to below the detection limit, and has concentration-dependent bactericidal activity against *C. difficile* bacteria^[2].

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

Cell Viability Assay^[2]

Cell Line:	<i>C. difficile</i> strains
Concentration:	
Incubation Time:	48 hours
Result:	The MICs of ronidazole ranged from 0.0625 to 0.25 µg/mL, while the MIC ₅₀ and MIC ₉₀ values were 0.125 µg/mL.

Cell Viability Assay^[2]

Cell Line:	<i>C. difficile</i> strains
Concentration:	0.3125 µg/mL, 1.25 µg/mL
Incubation Time:	8 hours
Result:	Ronidazole, at 0.3125 µg/mL, reduces the initial inoculum by more than 50%. At 1.25 µg/mL, ronidazole reduced the burden of <i>C. difficile</i> by more than 50% in less than four hours. Bacteria did not regrow when exposed to 1.25 µg/mL of ronidazole.

In Vivo

Pharmacokinetic Analysis in six cats^[3]

lastmax Dose (mg/kg) Time (h) AUC C (ng/mL)

Drug administration	Dose (mg/kg)	T _{1/2} (K) (h)	C ₀ (µg/mL)	AUC _{0-∞} (h•µg/m)	Vd or Vd/F (mL/kg)	Clearance or CL/F (h)	MRT (h)	T _{max} (h)	C _{max} (µg/m)	F (%)
i.v.	9.175	9.80	13.27	187.30	700	0.82	14.14	NA	NA	NA
p.o.	28.23	10.50	NA	566.98	770	0.84	NA	1.02	35.37	99.64

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

Animal Model:	
Dosage:	
Administration:	
Result:	
Animal Model:	CDI mice model
Dosage:	1 mg/kg, 10mg/kg
Administration:	Oral gavage

Result:

Both 1 mg/kg and 10 mg/kg Ronidazole protected 60% of mice from infection

CUSTOMER VALIDATION

- Zebrafish. 2023 May 25.
- Research Square Preprint. 2021 Aug.

See more customer validations on www.MedChemExpress.com

REFERENCES

- [1]. AbdelKhalek A, et al. Repurposing the Veterinary Antiprotozoal Drug Ronidazole for the Treatment of Clostridioides difficile Infection. *Int J Antimicrob Agents*. 2020;56(6):106188.
- [2]. LeVine DN, et al. Ronidazole pharmacokinetics after intravenous and oral immediate-release capsule administration in healthy cats. *J Feline Med Surg*. 2011;13(4):244-250.
- [3]. Jody L Gookin, et al. Efficacy of ronidazole for treatment of feline Tritrichomonas foetus infection. *J Vet Intern Med*
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Caution: Product has not been fully validated for medical applications. For research use only.

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