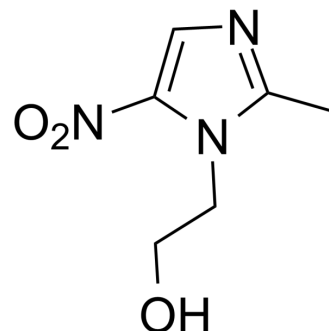


Metronidazole

Cat. No.:	HY-B0318
CAS No.:	443-48-1
Molecular Formula:	C ₆ H ₉ N ₃ O ₃
Molecular Weight:	171.15
Target:	Bacterial; Parasite; Apoptosis; Antibiotic
Pathway:	Anti-infection; Apoptosis
Storage:	4°C, protect from light * In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



SOLVENT & SOLUBILITY

In Vitro	DMSO : 35 mg/mL (204.50 mM; Need ultrasonic and warming)					
	H ₂ O : 16.67 mg/mL (97.40 mM; Need ultrasonic)					
	Preparing Stock Solutions	Solvent	Mass	1 mg	5 mg	10 mg
		Concentration				
		1 mM		5.8428 mL	29.2141 mL	58.4283 mL
5 mM			1.1686 mL	5.8428 mL	11.6857 mL	
	10 mM		0.5843 mL	2.9214 mL	5.8428 mL	
Please refer to the solubility information to select the appropriate solvent.						
In Vivo	1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline Solubility: ≥ 2.08 mg/mL (12.15 mM); Clear solution					
	2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline) Solubility: ≥ 2.08 mg/mL (12.15 mM); Clear solution					
	3. Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: ≥ 2.08 mg/mL (12.15 mM); Clear solution					

BIOLOGICAL ACTIVITY

Description	<p>Metronidazole is a nitroimidazole antibiotic medication used particularly for anaerobic bacteria and protozoa. Target: Antibacterial; Antiparasitic</p> <p>Metronidazole is a nitroimidazole antibiotic medication used particularly for anaerobic bacteria and protozoa. Metronidazole is an antibiotic, amebicide, and antiprotozoal.[1] It is the drug of choice for first episodes of mild-to-moderate Clostridium difficile infection [2]. Metronidazole, taken up by diffusion, is selectively absorbed by anaerobic bacteria and sensitive protozoa. Once taken up by anaerobes, it is non-enzymatically reduced by reacting with reduced ferredoxin, which is generated by pyruvate oxido-reductase. Many of the reduced nitroso intermediates will form sulfinamides and thioether linkages with cysteine-bearing enzymes, thereby deactivating these critical enzymes. As many as 150 separate enzymes are affected. In addition or alternatively, the metronidazole metabolites are taken up into bacterial</p>
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DNA, and form unstable molecules. This function only occurs when metronidazole is partially reduced, and because this reduction usually happens only in anaerobic cells, it has relatively little effect upon human cells or aerobic bacteria.[3]

CUSTOMER VALIDATION

- Microbiome. 2020 Aug 20;8(1):120.
- Cell Rep. 2020 Dec 1;33(9):108438.
- Cell Death Dis. 2021 Jun 7;12(6):582.
- Emerg Microbes Infect. 2022 Feb 22;1-34.
- J Cell Physiol. 2021 Dec 8.

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REFERENCES

[1]. In Schaechter, M.; Engleberg, N. C.; DiRita, V. J. et al. Schaechter's Mechanisms of Microbial Disease. Hagerstown, MD: Lippincott Williams & Wilkins. p. 28.

[2]. <http://www.drugs.com/monograph/metronidazole.html>

[3]. Cohen, S.H., et al., Clinical practice guidelines for Clostridium difficile infection in adults: 2010 update by the society for healthcare epidemiology of America (SHEA) and the infectious diseases society of America (IDSA). Infect Control Hosp Epidemiol, 2010. 31(5): p. 431-55.

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

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