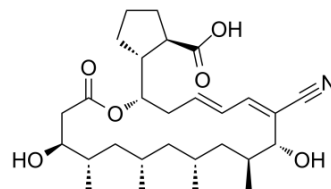


## Borrelidin

Cat. No.:	HY-N6742		
CAS No.:	7184-60-3		
Molecular Formula:	C <sub>28</sub> H <sub>43</sub> NO <sub>6</sub>		
Molecular Weight:	489.64		
Target:	CDK; Parasite; Apoptosis		
Pathway:	Cell Cycle/DNA Damage; Anti-infection; Apoptosis		
Storage:	Powder	-20°C	3 years
	In solvent	-80°C	6 months
		-20°C	1 month



### SOLVENT & SOLUBILITY

#### In Vitro

Ethanol : ≥ 100 mg/mL (204.23 mM)

\* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Solvent Concentration	Mass		
		1 mg	5 mg	10 mg
	1 mM	2.0423 mL	10.2116 mL	20.4232 mL
	5 mM	0.4085 mL	2.0423 mL	4.0846 mL
	10 mM	0.2042 mL	1.0212 mL	2.0423 mL

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

#### In Vivo

1. Add each solvent one by one: **10% EtOH >> 40% PEG300 >> 5% Tween-80 >> 45% saline**

Solubility: ≥ 2.5 mg/mL (5.11 mM); Clear solution

2. Add each solvent one by one: **10% EtOH >> 90% corn oil**

Solubility: ≥ 2.5 mg/mL (5.11 mM); Clear solution

### BIOLOGICAL ACTIVITY

#### Description

Borrelidin (Treponemycin) is a bacterial and eukaryal **threonyl-tRNA synthetase** inhibitor which is a nitrile-containing macrolide antibiotic isolated from *Streptomyces rochei*<sup>[1]</sup>. Borrelidin (Treponemycin) is an inhibitor of **Cdc28/Cln2** of the budding yeast, with an **IC<sub>50</sub>** of 24 μM<sup>[2]</sup>. Borrelidin (Treponemycin) is a potent **angiogenesis** inhibitor, with an **IC<sub>50</sub>** of 0.8 nM, and induces apoptosis of the tube-forming cells. Borrelidin (Treponemycin) has strong antimalarial activities, with **IC<sub>50</sub>s** of 1.9 nM and 1.8 nM against K1 and FCR3 strains of *Plasmodium falciparum*<sup>[3]</sup>.

#### IC<sub>50</sub> & Target

IC<sub>50</sub> 24 μM (Cdc28/Cln2)<sup>[2]</sup>

#### In Vitro

Borrelidin (Treponemycin) can target ALL cell lines and induce apoptosis and mediating G(1) arrest.

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## REFERENCES

- [1]. Habibi D, et al. Borrelidin, a small molecule nitrile-containing macrolide inhibitor of threonyl-tRNA synthetase, is a potent inducer of apoptosis in acute lymphoblastic leukemia. *Invest New Drugs*. 2012 Aug;30(4):1361-70.
- [2]. Tsuchiya E, et al. Borrelidin inhibits a cyclin-dependent kinase (CDK), Cdc28/Cln2, of *Saccharomyces cerevisiae*. *J Antibiot (Tokyo)*. 2001 Jan;54(1):84-90.
- [3]. Wakabayashi T, et al. Borrelidin is an angiogenesis inhibitor; disruption of angiogenic capillary vessels in a rat aorta matrix culture model. *J Antibiot (Tokyo)*. 1997 Aug;50(8):671-6.
- [4]. Otaguro K, et al. In vitro and in vivo antimalarial activities of a non-glycosidic 18-membered macrolide antibiotic, borrelidin, against drug-resistant strains of *Plasmodia*. *J Antibiot (Tokyo)*. 2003 Aug;56(8):727-9.
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**Caution: Product has not been fully validated for medical applications. For research use only.**

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