



Catalog # 10-1399

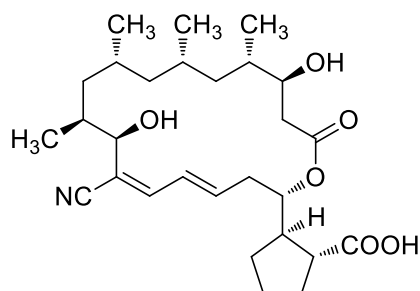
Borrelidin

CAS# 7184-60-3

U-78548, C2989, Treponemycin

Fermentation product from *Streptomyces* sp.

Lot # X102318



Novel macrolide which inhibits bacterial and eukaryotic threonyl-tRNA synthetase.¹ Displays potent anti-angiogenic activity (IC₅₀=0.8 nM) and induces the collapse of newly formed capillary tubules.² Modulates alternative splicing of VEGF in favor of anti-angiogenic isoforms.³ Induces apoptosis in ALL cell lines.⁴ Induces unfolded protein response in oral cancer cells.⁵ Cell permeable.

- 1) Ruan et al. (2005), A unique hydrophobic cluster near the active site contributes to differences in borrelidin inhibition among threonyl-tRNA synthetases; J. Biol. Chem., **280** 571
- 2) Kawamura et al. (2003), Anti-angiogenesis effects of borrelidin are mediated through distinct pathways: threonyl-tRNA synthase and caspases are independently involved in suppression of proliferation and induction of apoptosis in endothelial cells; J. Antibiot., **56** 709
- 3) Woolard et al. (2011) Borrelidin modulates the alternative splicing of VEGF in favour of anti-angiogenic isoforms; Chem. Soc. **2011** 273
- 4) Habibi et al. (2012), Borrelidin, a small molecule nitrile-containing macrolide inhibitor of threonyl-tRNA synthase, is a potent inducer of apoptosis in acute lymphoblastic leukemia; Invest. New Drugs, **30** 1361
- 5) Sidhu et al. (2015), Borrelidin Induces the Unfolded Protein Response in Oral Cancer Cells and Chop-Dependent Apoptosis; ACS Med. Chem. Lett., **6** 1122

PHYSICAL DATA

Molecular Weight:	489.66
Molecular Formula:	C ₂₈ H ₄₃ NO ₆
Purity:	98% by HPLC
	NMR: (Conforms)
Solubility:	DMSO or Ethanol
Physical Description:	Off-white solid
Storage and Stability:	Store as supplied desiccated at -20°C for up to 2 years from the date of purchase. Solutions in DMSO or ethanol may be stored at -20°C for up to 3 months.

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