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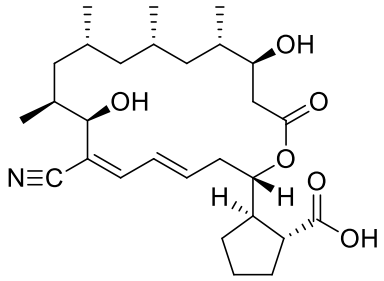
PRODUCT DATA SHEET

Borrelidin

Code No.: **BIA-B1013**

Pack sizes: **0.5 mg, 2.5 mg**



Synonyms : Treponemycin, U 78548, C2989

Specifications

CAS #	:	**7184-60-3**
Molecular Formula	:	**$C_{28}H_{43}NO_6$**
Molecular Weight	:	**489.6**
Source	:	***Streptomyces* sp.**
Appearance	:	**White Lyophilisate**
Purity	:	**>95% by HPLC**
Long Term Storage	:	**-20°C**
Solubility	:	**Soluble in methanol, DMSO. Poor water solubility.**

Application Notes

Borrelidin is an unusual nitrile-containing metabolite isolated from Streptomyces. Originally discovered as active against Borrelia species, borrelidin has since found a role as a selective inhibitor of bacterial and eukaryal threonyl-tRNA synthetase. More recent research has found that borrelidin is a very potent angiogenesis inhibitor and induces apoptosis of the capillary tube-forming cells. Borrelidin is an important lead for antimalarial discovery, displaying activity against drug-resistant Plasmodia.

References

1. A unique hydrophobic cluster near the active site contributes to differences in borrelidin inhibition among threonyl-tRNA synthetases. Ruan T. et al., J. Biol. Chem. 2005, 280, 571.
2. Borrelidin is an angiogenesis inhibitor; disruption of angiogenic capillary vessels in a rat aorta matrix culture model. Wakabayashi T. et al., J. Antibiot. 1997, 50, 671.
3. Anti-angiogenesis effects of borrelidin are mediated through distinct pathways: threonyl-tRNA synthetase and caspases are independently involved in suppression of proliferation and induction of apoptosis in endothelial cells. Kawamura T. et al., J. Antibiot. 2003, 56, 709.
4. In vitro and in vivo antimalarial activities of a non-glycosidic 18-membered macrolide antibiotic, borrelidin, against drug-resistant strains of Plasmodia. Otoguro K, et al., J. Antibiot. 2003, 56, 727.

For in vitro laboratory use only. Not for human or animal use.

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