Product Data Sheet

Product Name: Nosiheptide
Cat. No.: GC38117

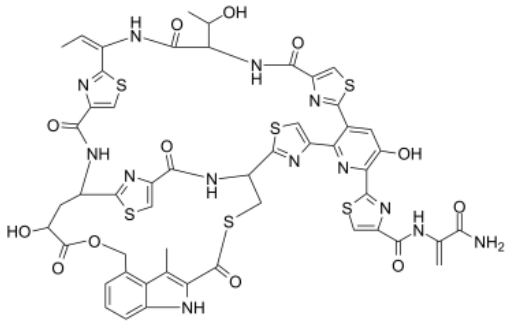
Chemical Properties

Cas. No.	56377-79-8		
SMILES	OC1=C(C2=NC(C(NC(C(N)=O)=C)=O)=CS2)N=C(C3=CSC(C4NC(C5=CSC(C(CC(C(OCC6=C7C(C)=C(NC7=CC=C6)C(SC4)=O)=O)O)NC(C8=CSC(/C(NC(C(C(O)C)NC(C9=CSC%10=N9)=O)=O)=C\C)=N8)=O)=N5)=O)=N3)C%10=C1		
Formula	$C_{51}H_{43}N_{13}O_{12}S_6$	M.Wt	1222.36
Solubility	DMSO: 125 mg/mL (102.26 mM)	Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20°C for several months.		
Shipping Condition	Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.		

Caution: Product has not been fully validated for medical applications. For research use only.
Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com
Address: 10292 Central Ave. #205, Montclair, CA, USA

Product Data Sheet

Structure



Background

Nosiheptide (Multhiomycin), a thiopeptide antibiotic produced by Streptomyces actuosus, inhibits bacterial protein synthesis and bears a unique indole side ring system and regiospecific hydroxyl groups on the characteristic macrocyclic core. Nosiheptide has been widely used as a feed additive for animal growth[1][2].

Nosiheptide exhibits extremely potent activity against all contemporary Staphylococcus aureus strains tested including multiple drug-resistant clinical isolates, with MIC values ≤ 0.25 mg/L. Nosiheptide is also highly active against Enterococcus spp and the contemporary hypervirulent BI strain of Clostridium difficile but is inactive against most Gram-negative strains tested. Time-kill analysis reveals Nosiheptide to be rapidly bactericidal against Staphylococcus aureus in a concentration- and time-dependent manner, with a nearly 2-log kill noted at 6 hours at 10X MIC. Furthermore, Nosiheptide is found to be non-cytotoxic against mammalian cells at >> 100X MIC, and

its anti-Staphylococcus aureus activity is not inhibited by 20% human serum. Notably, Nosiheptide exhibits a significantly prolonged post-antibiotic effect against both healthcare- and community-associated Staphylococcus aureus compared to vancomycin[1].

Nosiheptide (20 mg/kg; intraperitoneal injection; injected at 1 and 8 h post-infection; female CD1 mice) provids significant protection against mortality. Ten out of 10 of the Nosiheptide-treated mice remains alive on day 3, while 6/10 of the controls died on day 1[1]. Animal Model: Eight week old female CD1 mice injected with HA-Staphylococcus aureus strain Sanger 252[1]

[1]. Haste NM, et al. Activity of the thiopeptide antibiotic nosiheptide against contemporary strains of methicillin-resistant Staphylococcus aureus. J Antibiot (Tokyo). 2012 Dec;65(12):593-8. [2]. Yu Y, et al. Nosiheptide biosynthesis featuring a unique indole side ring formation on the characteristic thiopeptide framework. ACS Chem Biol. 2009 Oct 16;4(10):855-64.

Caution: Product has not been fully validated for medical applications. For research use only.
Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com
Address: 10292 Central Ave. #205, Montclair, CA, USA