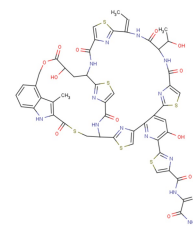


## Nosiheptide

## Chemical Properties

CAS No.:	56377-79-8
Formula:	C <sub>51</sub> H <sub>43</sub> N <sub>13</sub> O <sub>12</sub> S <sub>6</sub>
Molecular Weight:	1222.36
Appearance:	N/A
Storage:	0-4°C for short term (days to weeks), or -20°C for long term (months).



## Biological Description

Description	Nosiheptide is a thiopeptide antibiotic produced by <i>Streptomyces actuosus</i> . Nosiheptide has been widely used as a feed additive for animal growth. Nosiheptide inhibits bacterial protein synthesis and bears a unique indole side ring system and regio-specific hydroxyl groups on the characteristic macrocyclic core.
Targets(IC <sub>50</sub> )	Others: None
In vitro	Nosiheptide is found to be non-cytotoxic against mammalian cells at >> 100X MIC, and its anti- <i>Staphylococcus aureus</i> activity is not inhibited by 20% human serum. Nosiheptide is also highly active against <i>Enterococcus</i> spp and the contemporary hypervirulent BI strain of <i>Clostridium difficile</i> but is inactive against most Gram-negative strains tested. Nosiheptide shows extremely effective activity against all contemporary <i>Staphylococcus aureus</i> strains tested including multiple drug-resistant clinical isolates (MIC values ≤ 0.25 mg/L). Nosiheptide shows an obviously prolonged post-antibiotic effect against both healthcare- and community-associated <i>Staphylococcus aureus</i> compared to vancomycin. Time-kill analysis reveals Nosiheptide to be rapidly bactericidal against <i>Staphylococcus aureus</i> in a concentration- and time-dependent manner, with a nearly 2-log kill, noted at 6 hours at 10X MIC [1].
In vivo	Nosiheptide (20 mg/kg; intraperitoneal injection; injected at 1 and 8 h post-infection; female CD1 mice) offers obviously protection against mortality. Ten out of 10 of the Nosiheptide-treated mice remain alive on day 3, while 6/10 of the controls died on day 1[1].

## Solubility Information

Solubility	DMSO: 125 mg/mL (102.26 mM) (< 1 mg/ml refers to the product slightly soluble or insoluble)
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## Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	0.818 mL	4.09 mL	8.181 mL
5 mM	0.164 mL	0.818 mL	1.636 mL
10 mM	0.082 mL	0.409 mL	0.818 mL
50 mM	0.016 mL	0.082 mL	0.164 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. The storage conditions and period of the stock solution: - 80 °C for 6 months; - 20 °C for 1 month. Please use it as soon as possible.

## Reference

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.

## Inhibitors · Natural Compounds · Compound Libraries

This product is for Research Use Only · Not for Human or Veterinary or Therapeutic Use.

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