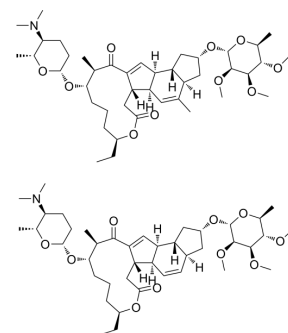


Spinosad

Cat. No.:	HY-138800		
CAS No.:	168316-95-8		
Molecular Formula:	C ₈₃ H ₁₃₂ N ₂ O ₂₀		
Molecular Weight:	1477.94		
Target:	nAChR		
Pathway:	Membrane Transporter/Ion Channel; Neuronal Signaling		
Storage:	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	6 months
		-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro	DMSO : 10 mg/mL (6.77 mM; ultrasonic and warming and heat to 60°C)					
		Solvent Concentration	Mass	1 mg	5 mg	10 mg
	Preparing Stock Solutions	1 mM	0.6766 mL	3.3831 mL	6.7662 mL	
		5 mM	0.1353 mL	0.6766 mL	1.3532 mL	
10 mM		---	---	---		
Please refer to the solubility information to select the appropriate solvent.						
In Vivo	<ol style="list-style-type: none"> Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline Solubility: ≥ 1 mg/mL (0.68 mM); Clear solution Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline) Solubility: 1 mg/mL (0.68 mM); Clear solution; Need ultrasonic Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: ≥ 1 mg/mL (0.68 mM); Clear solution 					

BIOLOGICAL ACTIVITY

Description	Spinosad, a mixture of spinosyns A and D known as fermentation products of a soil actinomycete (<i>Saccharopolyspora spinosa</i>), is a biological neurotoxic insecticide with a broader action spectrum. Spinosad targets the nicotinic acetylcholine receptor (nAChRs) of the insect nervous system. Spinosad has an excellent environmental and mammalian toxicological profile. Larvicidal activity ^{[1][2][3]} .
In Vitro	Spinosad acts as an allosteric agonist of acetylcholine (Ach) by binding to nicotinicacetylcholine receptors (nAChRs), prototypicalunits that function as neurotransmitter ligand-gated ion channels ^[4] .

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

In Vivo

Spinosad is a natural mixture of the pediculicidal tetracyclic macrolides spinosyn A and spinosyn D. Spinosad 0.9% mainly interferes with nicotinic acetylcholine receptors in insects, thereby producing neuronal excitation that results in paralysis of lice from neuromuscular fatigue after extended periods of hyperexcitation. Spinosad 0.9% kills both permethrin-susceptible and permethrin-resistant populations of lice. It is also ovicidal, killing both eggs (nits) and lice^[5].

Spinosad causes in vivo oxidative effects in the brain of *Oreochromis niloticus*. Spinosad causes elevations in the contents of tGSH, GSH, GSSG, Hsp70, and reductions in the ratio of GSH/GSSG and GPx activity and an induction in the GR (glutathione reductase) activity. Spinosad has oxidative effects in the brain tissue by altering the parameters in GSH-related antioxidant system and Hsp70^[6].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

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- [3]. Huang J, et al. High Level of Spinosad Production in the Heterologous Host *Saccharopolyspora erythraea*. *Appl Environ Microbiol.* 2016;82(18):5603-5611. Published 2016 Aug 30.
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Caution: Product has not been fully validated for medical applications. For research use only.

Tel: 609-228-6898

Fax: 609-228-5909

E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA