

PRODUCT INFORMATION



Spinosyn A

Item No. 16528

CAS Registry No.: 131929-60-7
Formal Name: (2R,3aS,5aR,5bS,9S,13S,14R,16aS,16bR)-2-[[6-deoxy-2,3,4-tri-O-methyl- α -L-mannopyranosyl]oxy]-13-[[[(2R,5S,6R)-5-(dimethylamino)tetrahydro-6-methyl-2H-pyran-2-yl]oxy]-9-ethyl-2,3,3a,5a,5b,6,9,10,11,12,13,14,16a,16b-tetradecahydro-14-methyl-1H-as-indaceno[3,2-d]oxacyclododecin-7,15-dione

Synonyms: A-83543A, Lepicidin A

MF: C₄₁H₆₅NO₁₀

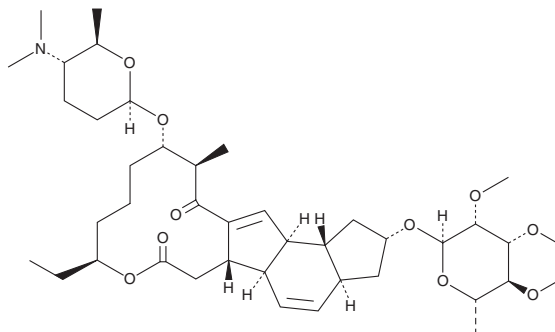
FW: 732.0

Purity: \geq 99%

Supplied as: A solid

Storage: -20°C

Stability: \geq 4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Spinosyn A is supplied as a solid. A stock solution may be made by dissolving the spinosyn A in the solvent of choice, which should be purged with an inert gas. Spinosyn A is soluble in organic solvents such as ethanol, methanol, DMSO, and dimethyl formamide.

Description

Spinosyn A is a naturally-occurring macrocyclic lactone that is a potent insecticide.^{1,2} It acts as an agonist of insect nicotinic acetylcholinesterase receptors (nAChRs), which differ both structurally and functionally from nAChRs in vertebrates.³ As a result, it has low affinity for vertebrate nAChRs and has limited adverse effects in those animals.^{3,4} Spinosyn A is produced naturally by the fermentation of the bacterium *S. spinosa* and its chemical synthesis has been described.⁵ Formulations containing spinosyn A have been used in the control of insects in agriculture.

References

1. Creemer, L.C., Kirst, H.A., Paschal, J.W., *et al.* Synthesis and insecticidal activity of spinosyn analogs functionally altered at the 2',-3'- and 4'-positions of the rhamnose moiety. *J. Antibiot. (Tokyo)* **53(2)**, 171-178 (2000).
2. Duke, S.O., Cantrell, C.L., Meepagala, K.M., *et al.* Natural toxins for use in pest management. *Toxins (Basel)* **2(8)**, 1943-1962 (2010).
3. Vo, D.T., Hsu, W.H., Abu-Basha, E.A., *et al.* Insect nicotinic acetylcholine receptor agonists as flea adulticides in small animals. *J. Vet. Pharmacol. Ther.* **33(4)**, 315-322 (2010).
4. Amaral, T.S., Carvalho, T.F., Silva, M.C., *et al.* Short-term effects of a spinosyn's family insecticide on energy metabolism and liver morphology in frugivorous bats *Artibeus lituratus* (Olfers, 1818). *Braz. J. Biol.* **72(2)**, 299-304 (2012).
5. Mergott, D.J., Frank, S.A., and Roush, R.W. Total synthesis of (-)-spinosyn A. *Proc. Natl. Acad. Sci. U.S.A.* **101(33)**, 11955-11959 (2004).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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