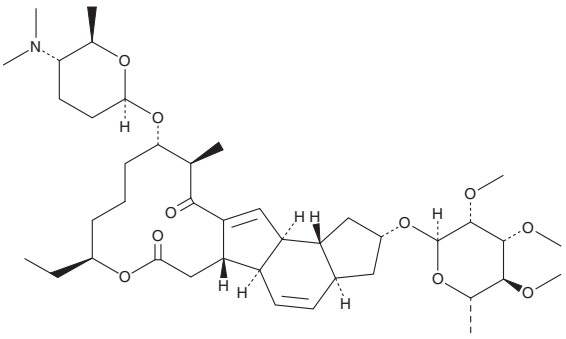
PRODUCT INFORMATION

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: $C_{41}H_{65}NO_{10}$
FW: 732.0
Purity: ≥99%
Supplied as: A solid
Storage: -20°C
Stability: ≥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

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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).

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