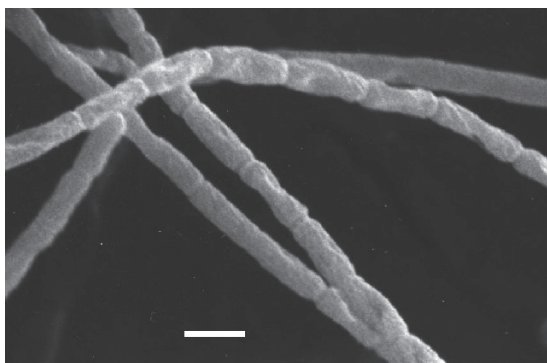


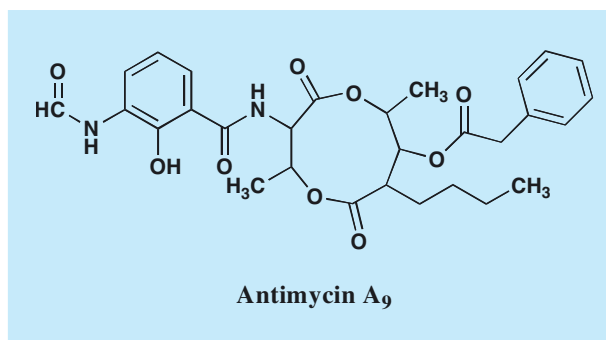
Antimycin A₉

1. Discovery, producing organism and structure¹⁾

A new antimycin group antibiotic, antimycin A₉, was isolated from the culture broth of an actinomycete strain K01-0031. Antimycin A₉ is the first antimycin having an aromatic 8-acyl residue. It showed potent nematocidal and insecticidal activities against *Caenorhabditis elegans* and *Artemia salina*, respectively. It inhibited bovine heart NADH oxidase at nanomolar level similar to other known antimycins. The total syntheses of this compound were reported by Tsunoda *et al.*^{2,3)} (See Appendix-I).



Streptomyces sp. K01-0031



2. Physical data (Antimycin A₉)

White powder. C₂₉H₃₄N₂O₉; mol wt 554.59. Sol. in DMSO, MeOH, CHCl₃. Insol. in H₂O, hexane.

3. Biological activity¹⁾

1) Nematocidal and insecticidal activity of antimycin A₉ and other known antimycins

Compound	MIC (μg/ml)	
	<i>C. elegans</i>	<i>A. salina</i>
Antimycin A _{3a}	1	0.2
Antimycin A _{3b}	1	0.2
Antimycin A ₄	1	0.2
Antimycin A ₇	>1	0.2
Antimycin A ₉	0.2	0.05

2) Inhibitory activity of electron transport enzyme

Antimycins are well known to inhibit ubiquinol:cytochrome *c* reductase (complex III). The IC₅₀ values of antimycin A_{3b} and antimycin A₉ against bovine heart NADH oxidase (complexes I+III+IV) were 15 nM and 35 nM, respectively.

4. References

- [879] K. Shiomi *et al.*, *J. Antibiot.* **58**, 74-78 (2005)
- T. Nishii *et al.*, *J. Antibiot.* **60**, 65-72 (2007)
- M. Inai *et al.*, *Eur. J. Org. Chem.* 2719-2729 (2011)