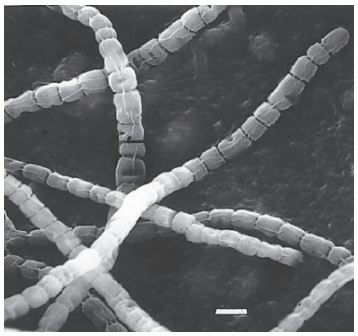
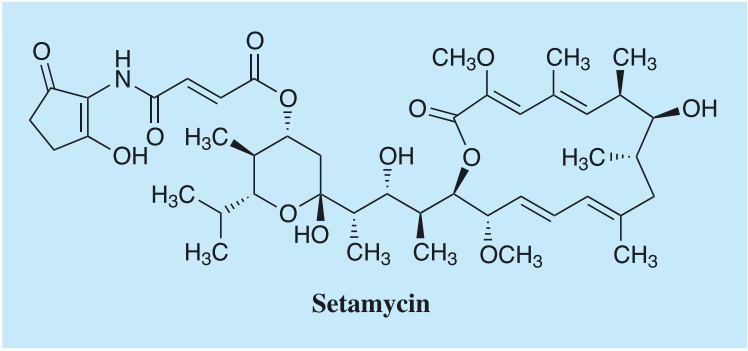
Setamycin©

1. Discovery, producing organism and structure[1-8)]

Setamycin was isolated from the culture broth of *Kitasatospora setae* strain KM-6054^T and recognized to possess antimicrobial and nematocidal activity[1,2)]. Later, bafilomycin[3,4)], a Golgi protein transfer inhibitor was found, and bafilomycin B1 was identified as being identical in structure to setamycin. The taxonomic study of the producing strain led us to establish a new genus of *Kitasatospora setae*[4-6)]. [See also " *Kitasatospora* gen. nov." (p. 394)].



Kitasatospora setae KM-6054^T



Setamycin

2. Physical data

Yellow powder. $C_{44}H_{65}NO_{13}$; mol wt 815.45. Sol. in MeOH, EtOH, benzene. Insol. in H_2O, hexane.

3. Biological activity[1,2,9)]

1) Antimicrobial spectrum[1)]

Test organism	MIC(μg/ml)	Medium
Bacillus subtilis PCI 219	25	I*
Bacillus cereus IFO 3001	12.5	I
Staphylococcus aureus FDA 209P	25	I
Micrococcus luteus PCI 1001	50	I
Mycobacterium smegmatis ATCC 607	50	I
Escherichia coli NIHJ	>100	I
Pseudomonas aeruginosa P-3	>100	I
Saccharomyces cerevisiae	0.78	II
Pyricularia oryzae	6.25	II
Alternaria kikuchiana	100	II
Mucor racemosus IFO 4851	>100	II
Trichomonas foetus	1.25	III
Trichomonas vaginalis S1	0.3	III

* I: Heart infusion agar. II: Potate-glucose agar.
III: Trichosel broth (BBL) by the broth dilution method.

2) Setamycin has nematocidal activity (pine wood nematoda, *Bursaphelenchus lignicolus)* with an IC_{50} value of 10 μg/ml[2)].

3) Setamycin (bafilomycin B1) showed antiparasitic activities against *Trypanosoma cruzi*, *Leishmania donovani*, and *Trypanosoma brucei brucei* with IC_{50} of <0.03, 0.68, and 8.9 nM, respectively.[9)]

4. Biosynthesis[10)]

The biosynthetic gene cluster was identified from the genome sequence of *K. setae* KM-6054^T.

5. References

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