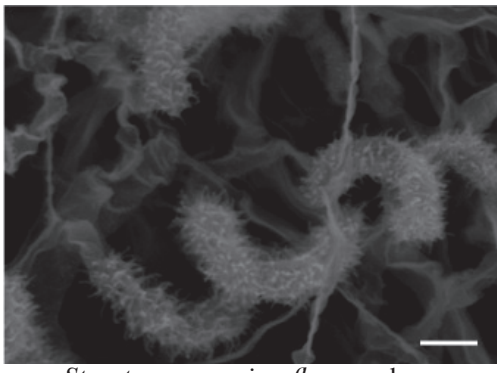
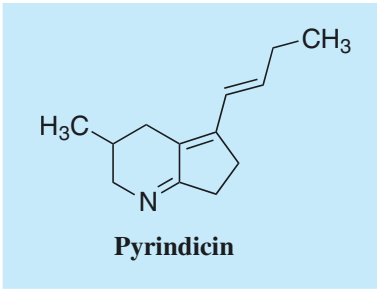
Pyrindicin

1. Discovery, producing organism and structure[1,2)]

Pyrindicin was isolated from the culture broth of *Streptomyces griseoflavus* subsp. *pyrindicus* NA-15^T while screening for microbial alkaloids. The producing strain was classified as a new taxon. The free pyrindicin was unstable and easily oxidized to brown syrup. It was thus converted to hydrochloride to obtain pure crystals.



Streptomyces griseoflavus subsp. *pyrindicus* NA-15^T



Pyrindicin

2. Physical data (Pyrindicin hydrochloride)[1)]

White crystals. $C_{13}H_{19}N{\cdot}HCl$; mol wt 225.76. Sol. in H_2O, MeOH, $CHCl_3$. Insol. in EtOAc, benzene, Et_2O.

3. Biological activity[2)]

1) Antimicrobial activity

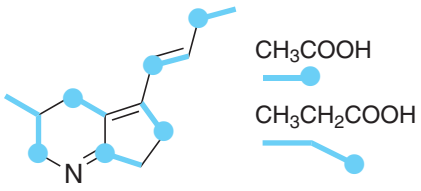
Pyrindicin hydrochloride showed weak antimicrobial activity against *Micrococcus luteus*, *Mycobacterium smegmatis*, and *Escherichia coli* (MIC: 250 μg/ml).

2) Pharmacological activity (Pyrindicin hydrochloride)

Intestine relaxation (*in vitro*, guinea pig): 1 μg/ml.
Inhibition of platelet aggregation (induced by collagen, *in vitro*, rabbit): 10 μg/ml.
Analgesic activity (antiwrithing, s.c., in mice): 25 mg/kg.
Narcoantagonistic activity (s.c., in mice): 50 mg/kg.

4. Biosynthesis[3)]

Biosynthesis of pyrindicin was studied by ^{13}C-NMR by incorporating ^{13}C-labeled precursors. The carbon skeleton was revealed to have originated from five acetates and one propionate.



5. References

1. [63] M. Onda *et al.*, *Chem. Pharm. Bull.* **21**, 2048-2049 (1973)
2. [76] S. Ōmura *et al.*, *Agricult. Biol. Chem.* **38**, 899-906 (1974)
3. [140] Y. Iwai *et al.*, *Chem. Pharm. Bull.* **26**, 736-739 (1978)