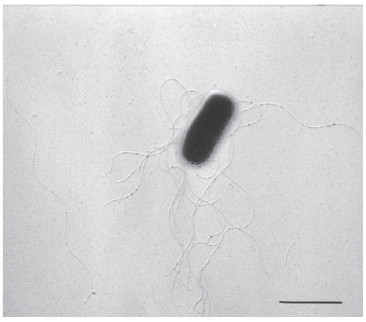
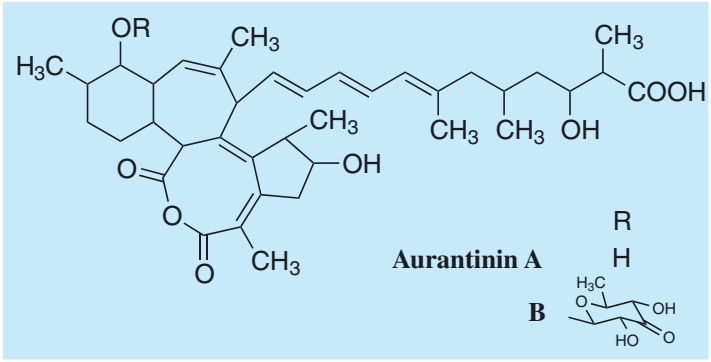
Aurantinin

1. Discovery, producing organism[1-3] and structures[4]

During screening for biologically active compounds from eubacteria, the novel antibiotics, aurantinins, were isolated from the fermentation broth of *Bacillus aurantinus* strain KM-214. The complicated polyketide skeleton was successfully elucidated from feeding experiments using ^{13}C-enriched compounds and NMR spectral analysis.



Bacillus aurantinus KM-214

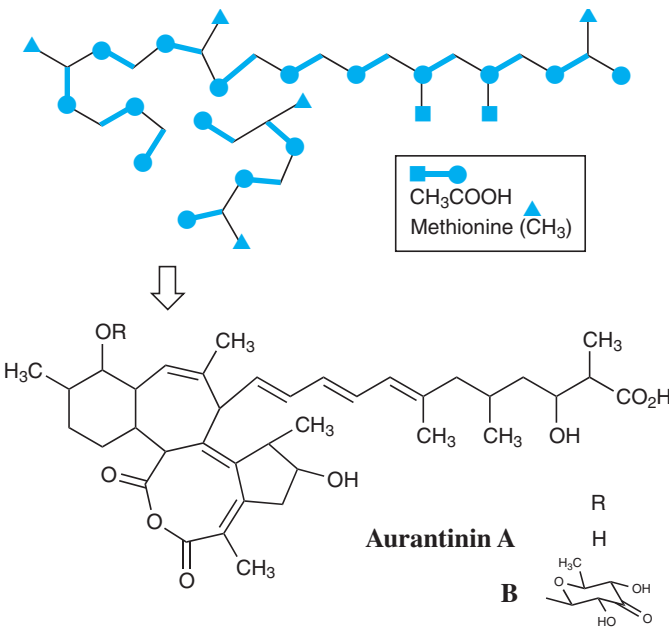


2. Physical data (Aurantinin A)

Yellow powder. $C_{35}H_{54}O_9$; mol wt 636.37. Sol. in EtOH, MeOH, EtOAc, acetone. Insol. in pertroleum ether, hexane, H_2O.

3. Biological activity[2,3]

Aurantinins exhibit potent antimicrobial activity against Gram-positive bacteria including anaerobic bacteria, but are inactive against Gram-negative bacteria, filamentous fungi and yeast. Aurantinin B is a more potent antimicrobial agent than aurantinin A.



4. Biosynthesis[4,5]

Study of auratinin biosynthesis led to the following conclusions:

1) the propionate pathway in this eubacterium does not function,

2) the C1 unit located in the primer acetate unit of the polyketide chain is derived from the methyl group of an acetate unit,

3) the C1 unit located in the tail of an acetate unit is derived from methionine and not from propionate.

5. References

1. [108] S. Ōmura *et al*., *J. Antibiot*. **29**, 477-478 (1976)
2. [143] T. Nishikiori *et al*., *J. Antibiot*. **31**, 525-532 (1978)
3. [385] Y. Konda *et al*., *J. Antibiot*. **41**, 268-270 (1988)
4. [395] A. Nakagawa *et al*., *J. Org. Chem*. **53**, 2660-2661 (1988)
5. [622] A. Nakagawa & S. Ōmura, *J. Antibiot*. **49**, 717-741 (1996)