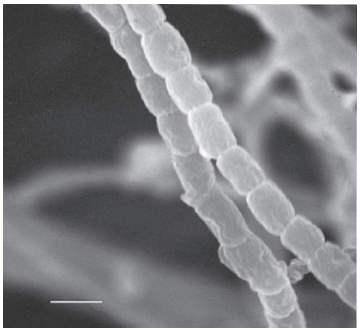
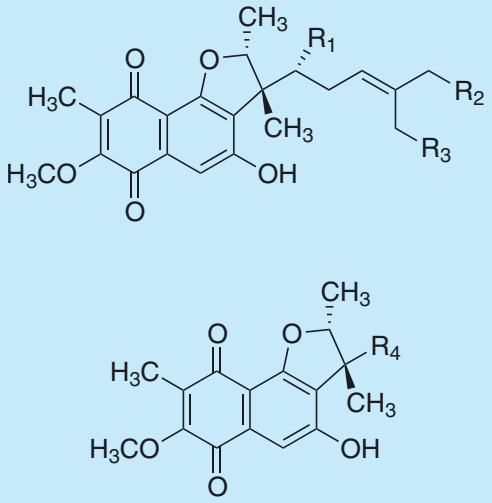
Furaquinocin

1. Discovery, producing organism and structures[1-11)]

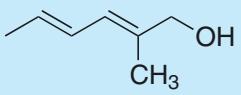
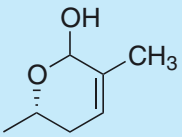
Furaquinocins were isolated as cytocidal antibiotics from the culture broth of the actinomycete strain KO-3988[1-3)]. Their absolute configurations were assigned using X-ray crystallographic analysis and chemical transformations[4)]. Total syntheses of furaquinocins were reported by Smith *et al*., Suzuki *et al*. and Trost *et al*.[5-10)] (See Appendix-I). The corresponding hmgs gene for HMG-CoA reductase was cloned from an actinomycete strain KO-3988[11)].



Streptomyces sp. KO-3988



	R_1	R_2	R_3
A	OH	H	OH
B	OH	OH	H
C	H	H	H
D	OH	H	H
F	H	OH	H
H	OH	OH	OH

	R_4
E	
G	

Furaquinocins

2. Physical data (Furaquinocin A)[2,3)]

Yellow needles. $C_{22}H_{26}O_7$; mol wt 402.17. Sol. in $CHCl_3$, EtOAc, MeOH. Insol. in H_2O.

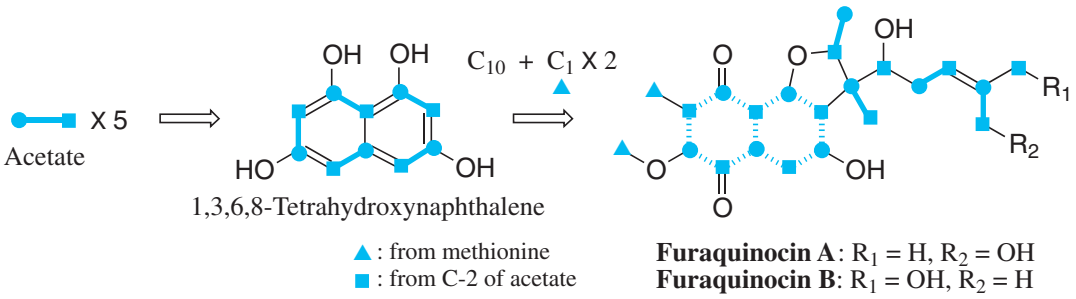
3. Biological activity[3)]

Cytocidal activities of fraquinocins A-H against B16 melanoma cells and HeLa S3 cells.

Cell line \ Furaquinocin	IC_{50} (μg/ml) A	B	C	D	E	F	G	H
B16	> 19.9	5.58	0.63	6.87	2.56	> 25	1.88	0.08
HeLa S3	> 21.9	1.33	1.22	5.05	1.30	> 25	0.92	0.22

4. Biosynthesis[12-14)]

Furaquinocins are derived from a pentaketide, two mevalonates, and two C_1 units of L-methionine. A biosynthetic gene cluster of furaquinocin A was cloned by Kawasaki *et al*. and function of the prenyltransferase was demonstrated by Kumano *et al*.



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