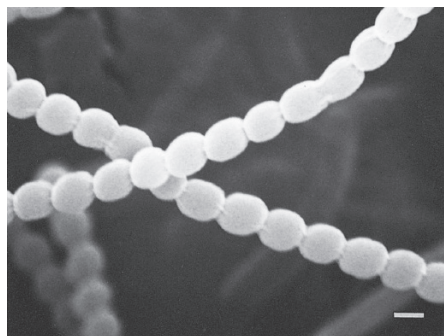


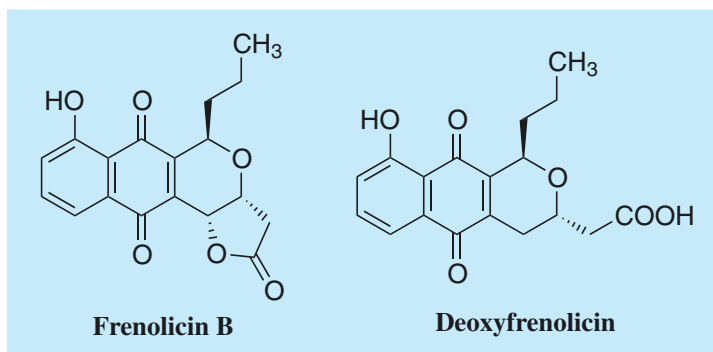
# Frenolicin B, Deoxyfrenolicin

## 1. Discovery, producing organism and structures<sup>1)</sup>

Frenolicin B and deoxyfrenolicin were isolated during the course of screening for antimycoplasmal antibiotics from the culture broth of *Streptomyces roseofulvus* strain AM-3867. The total synthesis of frenolicin B has been reported by many groups. The first total synthesis was reported by Kraus *et al*<sup>2)</sup> (See Appendix-I).



*Streptomyces roseofulvus* AM-3867



## 2. Physical data (Frenolicin B)<sup>1)</sup>

Orange columns. C<sub>18</sub>H<sub>16</sub>O<sub>6</sub>; mol wt 328.09. Sol. in MeOH.

## 3. Biological activity<sup>1,3)</sup>

### 1) Antimicrobial activity<sup>1)</sup>

Test organism	Medium*	MIC (μg/ml)	
		Frenolicin B	Deoxyfrenolicin
<i>Mycoplasma gallisepticum</i> Kp-13	E	3.16	0.78
<i>Mycoplasma gallisepticum</i> S-6	E	3.16	0.78
<i>Mycoplasma gallisepticum</i> 333p	E	3.16	0.78
<i>Mycoplasma pneumoniae</i>	E	3.16	0.4
<i>Acholeplasma laidlawii</i> (A) PG8	E	6.25	1.56
<i>Acholeplasma laidlawii</i> (B) Bml	E	50	50
<i>Candida albicans</i>	P	0.78	25
<i>Saccharomyces cerevisiae</i>	P	0.78	25
<i>Microsporium gypseum</i>	P	0.1	12.5
<i>Penicillium chrysogenum</i>	P	6.25	50
<i>Trichophyton interdigitale</i>	P	0.1	12.5
<i>Trichophyton mentagrophites</i>	P	12.5	25
<i>Pyricularia oryzae</i>	P	0.1	0.78
<i>Aspergillus fumigatus</i>	P	6.25	25
<i>Aspergillus niger</i>	P	100	100

\* E, Eiken PPLO agar (pH 7.8, 8 days, 37°C); P, glucose-potato agar (pH 6.4, 3 days, 27°C)

2) Frenolicin B shows anticoccidial activity *in vitro* and a strong immunity against *Eimeria tenella* infection in chicks<sup>3)</sup>.

## 2. Biosynthesis<sup>4,6)</sup>

The biosynthetic gene cluster for frenolicin was identified and the biosynthetic route to frenolicin B was constructed.

#### 4. References

1. [145] Y. Iwai *et al.*, *J. Antibiot.* **31**, 959-965 (1978)
2. G. A. Kraus *et al.*, *J. Am. Chem. Soc.* **115**, 5859-5860 (1993)
3. [332] S. Ōmura *et al.*, *J. Antibiot.* **38**, 1447-1448 (1985)
4. [536] M. J. Bibb *et al.*, *Gene* **142**, 31-39 (1994)
5. Y. Tang *et al.*, *Tetrahedron* **60**, 7659-7671 (2004)
6. J. T. Fitzgerald *et al.*, *J. Antibiot.* **64**, 759-762 (2011)