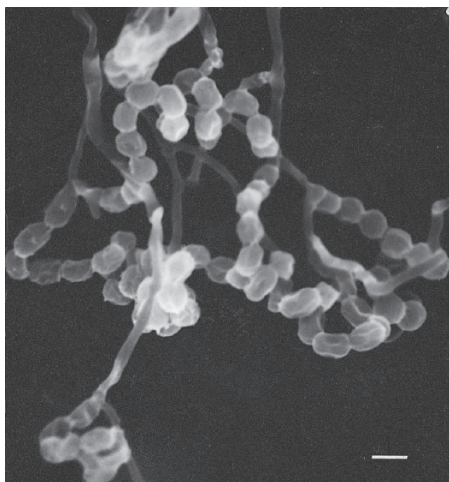


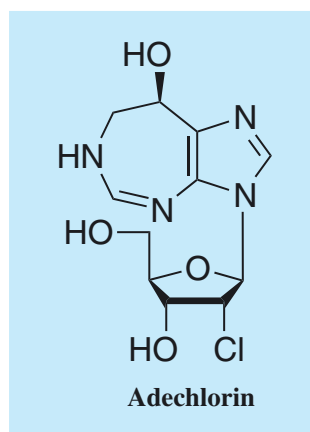
# Adechlorin

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

Adechlorin was isolated from the culture broth of Actinomycete strain OMR-37 and found to be a potent inhibitor of calf intestinal adenosine deaminase. The aglycone of adechlorin is identical to those of the known adenosine deaminase inhibitors; coformycin<sup>3)</sup>, 2'-deoxycoformycin<sup>3)</sup>, and adecypenol<sup>4)</sup>.



*Actinomadura* sp. OMR-37



## 2. Physical data

White powder. C<sub>11</sub>H<sub>15</sub>N<sub>4</sub>O<sub>4</sub>Cl; mol wt 302.72. Sol. in H<sub>2</sub>O, MeOH. Insol. in EtOAc, CHCl<sub>3</sub>.

## 3. Biological activity<sup>1-3,5)</sup>

Inhibition of adenosine deaminase

The adenosine deaminase inhibitors have been of interest in the chemotherapy of both viral diseases and cancer. The *K<sub>i</sub>* value of adechlorin against adenosine deaminase is 5.3x10<sup>-10</sup> M. Adechlorin completely inhibits the enzyme at 100 nM without preincubation. However, 1.0 nM adechlorin exhibits strong inhibition only when it is preincubated with the enzyme. Thus, adechlorin is a tightly binding-type inhibitor like coformycin and 2'-deoxycoformycin. Furthermore, adechlorin, coformycin and 2'-deoxycoformycin enhance the antiviral activity of ara-A against HSV-1. Adechlorin does not, however, exhibit antimicrobial activity against various bacteria or fungi even at a higher concentration (1.0 mg/ml).

## 4. References

- [323] S. Ōmura *et al.*, *J. Antibiot.* **38**, 1008-1015 (1985)
- [415] H. Tanaka & S. Ōmura, In "Novel Microbial Products for Medicine and Agriculture" (Eds. by A. L. Demain *et al.*) pp.67-72, Elsevier (1989)
- T. Takeuchi *et al.*, *Aci. Rep. Meiji Seika Kaisha* **11**, 17-21 (1970)
- [336] S. Ōmura *et al.*, *J. Antibiot.* **39**, 309-310 (1986)
- R. S. Hosmane, *Curr. Top. Med. Chem.* **2**, 1093-1109 (2002)