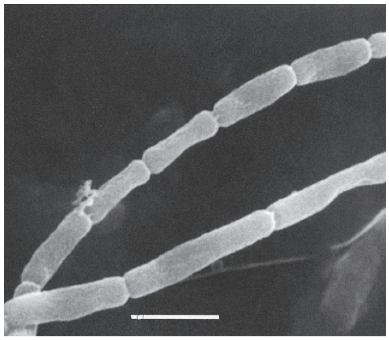
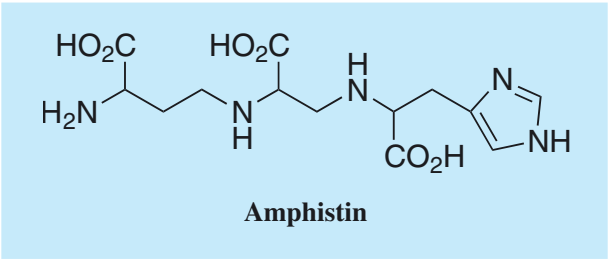
Amphistin

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

Amphistin was isolated from the culture broth of the actinomycete strain KP-3052 and identified as a melanogenesis inhibitor. It is a pseudotripeptide, γ-(β-histidinoalanino) homo-alanine.



Streptomyces sp. KP-3052



Amphistin

2. Physical data

White powder. $C_{13}H_{21}N_5O_6$; mol wt 343.34. Sol. in H_2O. Insol. in DMSO, acetone, $CHCl_3$.

3. Biological activity[1)]

1) Inhibition of melanogenesis

Amphistin inhibited the melanogenesis of B16 melanoma cells at a concentration of 6.8 μM, which is about ten times more potent than the melanogenesis inhibitor, arbutin. The IC_{50} value of amphistin against the growth of B16 melanoma cells was 55 μM.

Inhibitory effects of amphistin and arbutin on melanogenesis of B16 melanoma cells

Final conc. (μM)	Amphistin	Final conc. (μM)	Arbutin
55	toxic	551	toxic
27	white	275	yellowish white
14	white	138	yellowish white
6.8	gray	69	gray
3.4	black	34	brown
1.7	black	17	black

2) Antimicrobial activity[1)]

Amphistin weakly inhibited the growth of *Micrococcus luteus* PCI 1001, *Escherichia coli* NIHJ, *Pseudomonas aeruginosa* P3, and *Staphylococcus aureus* FDA 209P at a concentration of 10 μg/disc.

4. Reference

1. [681] N. Arai *et al.*, *J. Antibiot.* **50**, 808-814 (1997)