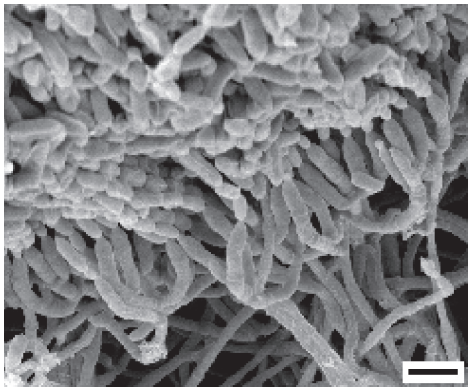
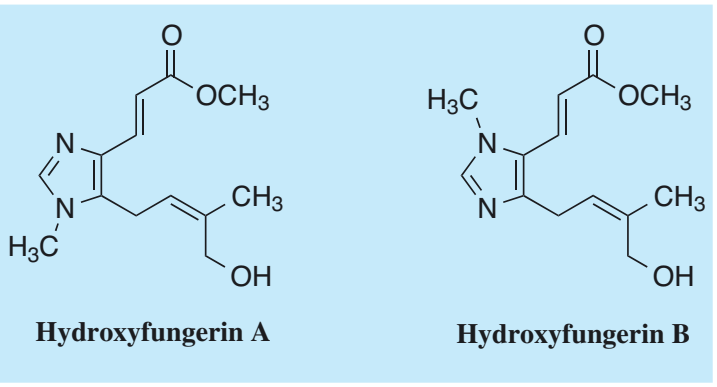
Hydroxyfungerin

1. Discovery, producing organism and structures[1,2)]

Hydroxyfungerins were isolated from the culture broth of the fungal strain *Metarhizium* sp. FKI-1079 together with a known compound, fungerin as insecticidal antibiotics. Fungerin was originally reported as an anti-fungal antibiotic.



Metarhizium sp. FKI-1079
Bar: 20 μm



2. Physical data[2)]

Pale yellow powder. $C_{13}H_{18}N_2O_3$; mol wt 250.29. Sol. in DMSO, MeOH, acetone, $CHCl_3$. Insol. in H_2O, hexane.

3. Biological activity[2)]

1) Insecticidal activity

The insecticidal activities of fungerin and hydroxyfungerins A and B were studied in a microplate assay using the brine shrimp *Altemia salina*. Minimum growth inhibitory concentrations (MIC) were summarized in the Table. Among them, fungerin was the most potent with an MIC value of 0.39 μg/ml (1.7 μM). Hydroxyfungerins A and B exhibited moderate inhibition with MICs of 6.25 μg/ml (25 μM).

2) Nematocidal activity

The nematocidal activities of fungerin and hydroxyfungerins A and B were studied in a microplate assay using the free-living nematode *Caenorhabditis elegans*. The MICs are summarized in the Table. Fungerin was the most potent, with an MIC value of 6.25 μg/ml (27 μM), while hydroxyfungerins A and B showed almost no activity at 50 μg/ml.

		MIC (μg/ml)	
Compound		A. salina	C. elegans
Fungerin		0.39	6.25
Hydroxyfungerin	A	6.25	>50
	B	6.25	>50

4. References

1. Y. Kato *et al.*, *Biosci. Biotech. Biochem.* **60**, 2081-2083 (1996)
2. [902] R. Uchida *et al.*, *J. Antibiot.* **58**, 808-809 (2005)