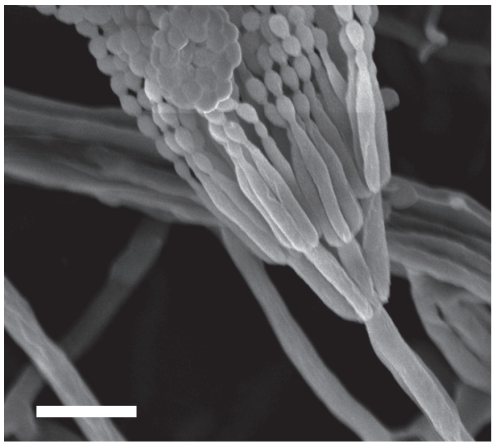
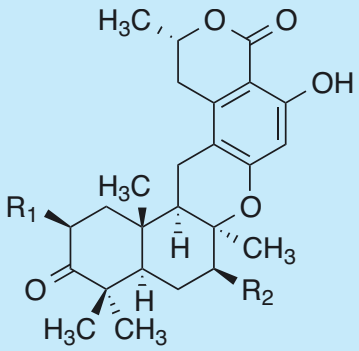
Pentacecilide

1. Discovery, producing organism and structure[1-3)]

Pentacecilides A-D were isolated from the culture broth of *Penicillium cecidicola* (current name: *Talaromyces cecidicola*) FKI-3765-1 and shown to be inhibitors of lipid droplet formation in mouse macrophages. They have a common pentacyclic meroterpenoid core with aromatic and δ-lactone rings.



Penicillium cecidicola FKI-3765-1
(*Talaromyces cecidicola* FKI-3765-1)
Bar: 10 μm



	R_1	R_2
Pentacecilide A	-H	-H
Pentacecilide B	-OAc	-H
Pentacecilide C	-OAc	-OH
Pentacecilide D	-OH	-OH

2. Physical data (Pentacecilide A)

White crystalline solid. $C_{25}H_{32}O_5$; mol wt 412.52. Sol. in MeOH, $CHCl_3$.

3. Biological activity[1)]

1) Inhibitory activity of lipid droplet formation

Pentacecilides A and B inhibited the synthesis of [^{14}C]-choresteryl ester (CE) in mouse macrophages in dose-dependent manner with IC_{50} values of 3.65 and 4.76 μM, respectively. However, pentacecilides C and D showed no effect on CE synthesis.

2) Inhibitory activity of CE synthesis in ACAT1 and ACAT2-CHO-cells

Pentacecilide A inhibited ACAT1 and ACAT2, with IC_{50} values of 1.09 and 0.69 μM, respectively.

4. References

1. [1044] H. Yamazaki *et al*., *J. Antibiot*. **62**, 195-200 (2009)
2. [1045] H. Yamazaki *et al*., *J. Antibiot*. **62**, 207-211 (2009)
3. H. Yamazaki *et al*., *J. Antibiot*. **63**, 315-318 (2010)