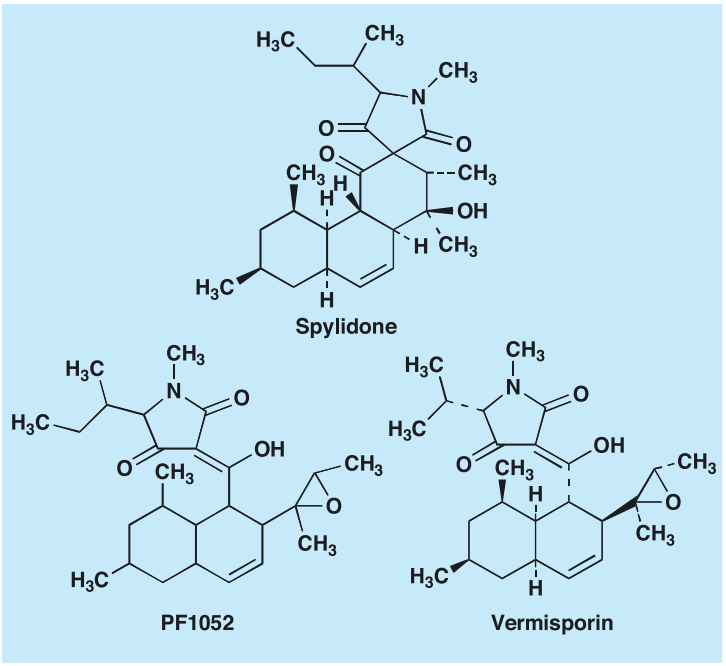
Spylidone

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

Spylidone was isolated from the culture broth of *Phoma* sp. FKI-1840 as an inhibitor of lipid droplet accumulation in mouse macrophages. In addition, the structurally related compounds, PF1052 and vermisporin, were isolated together with spylidone.

Phoma sp. FKI-1840
Bar: 50 μm

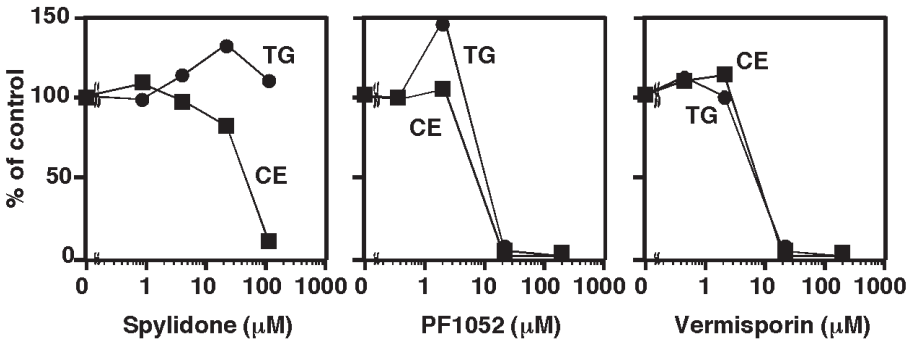


2. Physical data (Spylidone)

Colorless oil. $C_{26}H_{39}NO_4$; mol wt 429.59. Sol. in DMSO, MeOH, $CHCl_3$, EtOAc. Insol. in H_2O.

3. Biological activity[1,4)]

Inhibitory activity against cholesteryl ester (CE) and triacylglycerol (TG) synthesis of the cytosolic lipid droplet in mouse macrophage was tested. Spylidone inhibited CE synthesis in a dose-dependent manner with an IC_{50} value of 42 μM, but showed almost no inhibition of TG synthesis even at 109 μM. Conversely, PF1052 and vermisporin inhibited CE, TG and phospholipid synthesis to similar extents, probably due to their cytotoxic effects on macrophages. Thus, among the three compounds, only spylidone showed selectivity.[1)]



Spyridone inhibited ACAT1 (IC_{50}= 25 μM) and ACAT2 (IC_{50}= 5.0 μM,) to similar extent.[4)]

4. References

1. [888] N. Koyama *et al., J. Antibiot.* **58**, 338-345 (2005)
2. A. Takahashi *et al., Jpn. Kokai Tokkyo Koho* JP 08059612 (1996)
3. T. Mikawa *et al., Jpn. Kokai Tokkyo Koho* JP 02040328 (1990)
4. [955] T. Ohshiro *et al., J. Antibiot.* **60**, 43-51 (2007)