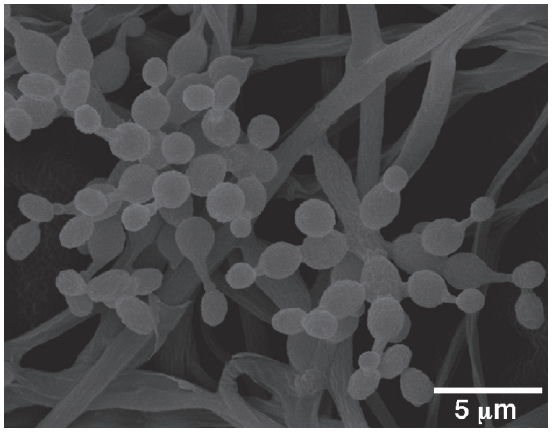
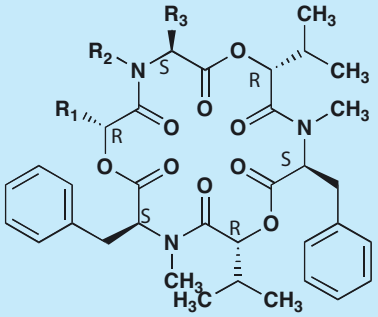
Beauvericin

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

Beauvericins were found from the culture broth of the fungal strain *Beauveria* sp. FKI-1366 as potentiators of antifungal miconazole activity.



Beauveria sp. FKI-1366



Compound	R_1	R_2	R_3
Beauvericin D	$CH(CH_3)_2$	H	$CH_2C_6H_5$
Beauvericin E	$CH(CH_3)_2$	H	$CH_2CH(CH_3)_2$
Beauvericin F	$CH_2CH(CH_3)_2$	CH_3	$CH_2C_6H_5$
Beauvericin[3)]	$CH(CH_3)_2$	CH_3	$CH_2C_6H_5$
Beauvericin A[4)]	$CH(CH_3)CH_2CH_3$	CH_3	$CH_2C_6H_5$

2. Physical data (Beauvericin D)

White powder. $C_{44}H_{55}N_3O_9$; mol wt 769.92. Sol. in DMSO, MeOH, $CHCl_3$. Insol. in H_2O, hexane.

3. Biological activity[1)]

Potentiation of antifungal miconazole activity

Effect of beauvericins on miconazole activity against fluconazole resistant *Candida albicans* was investigated by the broth microdilution test. From comparison of the IC_{50} values of miconazole activity, beauvericins potentiated miconazole activity by 1.1 ~ 6.8 fold. Among them, beauvericin A is the most potent, followed by beauvericins D and E.

Addition	IC_{50} of miconazole (µM)	Ratio (control /+ drug)
No (control)	1.3	1
+ Beauvericin D	0.25	5.2
+ Beauvericin E	0.31	4.2
+ Beauvericin F	1.2	1.1
+ Beauvericin	0.48	2.7
+ Beauvericin A	0.19	6.8

4. References

1. [851] T. Fukuda *et al.*, *J. Antibiot.* **57**, 110-116 (2004)
2. [852] T. Fukuda *et al.*, *J. Antibiot.* **57**, 117-124 (2004)
3. A. Logrieco *et al.*, *J. Appl. Environ. Microbiol.* 3084-3088 (1998)
4. C. Nilanonta *et al.*, *Tetrahedron* **58**, 3355-3360 (2002)