

PHYTOCHEMICAL REPORTS

ASCOCHLORIN: A TERPENOID METABOLITE FROM *ACREMONIUM LUZULAE*

NERA CAGNOLI-BELLAVITA, PAOLO CECCHERELLI and RENATA FRINGUELLI

Istituto di Chimica Organica, Facoltà di Farmacia dell'Università Perugia, Italia

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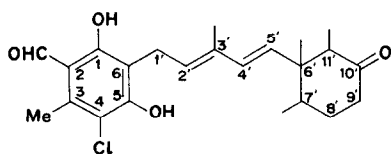
MARIO RIBALDI

Istituto di Micologia, Facoltà di Agraria dell'Università Perugia, Italia

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Key Word Index—*Acremonium luzulae*; albino mutant strain; Moniliaceae; fungi; terpenoid; ascochlorin.

During our investigations on microbiological metabolites from *Acremonium* genus [1–3], we isolated from a spontaneous albino mutant of *A. luzulae* (Fuckel) Gams,* a metabolite identified with ascochlorin (1).



Ascochlorin (1)

This is the first time that ascochlorin has been isolated from *Acremonium*, its presence being previously ascertained only in an unclassified *Fusarium* species [4] and in *Ascochyta viciae* [5]. Cultures of *Acremonium* (7 l.) were extracted with BuOH. The residue (10 g) was chromatographed on a SiO₂ column; by elution with C₆H₆–EtOAc (9:1) a pure product (0.5 g) was obtained, identified with ascochlorin: mp 171–173° (from EtOAc), [α]_D –30° (c = 0.9 MeOH). (Found: C, 68.41; H, 7.17; Cl, 9.27. C₂₃H₂₉O₄Cl requires: C, 68.22; H, 7.22; Cl, 8.74%). UV $\lambda_{\max}^{\text{MeOH}}$ 236, 296 and 352 nm (ϵ 35600, 11340 and 10170), shift on principal band to 356 nm in NaOH. IR $\nu_{\max}^{\text{CHCl}_3}$ 1704 and 1631 cm^{–1}. The MS at 70 eV; m/e 404 (M⁺), 389, 332,

319, 291, 265, 239, 205, 199, 187, 133. The 100 MHz PMR spectrum (CDCl₃, ppm) displayed the following signals: 0.71, s (C₆–CH₃); 0.81, d (J 3Hz), C₇–CH₃; 0.87, d (J 3Hz), (C₁₁–CH₃); 1.93, s (C₃–CH₃); 2.59, s (aromatic–CH₃); 5.53, d (J 3Hz), (aromatic–CH₂); 5.38, d (J 16Hz), (C₄–H); 5.88, d (J 16Hz), (C₅–H); 5.53, m (C₂–H); 6.43, s (non chelated –OH); 10.17, s (–CHO); 12.62, s (chelated –OH).

The structures of other constituents are under investigation.

EXPERIMENTAL

A voucher specimen is deposited in the Istituto di Micologia, Facoltà di Agraria, Università di Perugia. The *Acremonium luzulae* mutant was grown on organic media (carrot extract and glucose) in stationary phase and in daylight at 23° for 30 days. Mp are uncorrected. TLC Si gel H (Fluka), column chromatography Kieselgel 60 (Merck).

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REFERENCES

1. Cagnoli-Bellavita, N., Ceccherelli, P., Ribaldi, M., Polonsky, J. and Baskevitch, Z. (1969) *Gazz. Chim. Ital.* **99**, 1354.
2. Cagnoli-Bellavita, N., Ceccherelli, P., Mariani, R., Polonsky, J. and Baskevitch, Z. (1970) *Eur. J. Biochem.* **15**, 356.
3. Ceccherelli, P., Cagnoli-Bellavita, N., Polonsky, J. and Baskevitch, Z., (1973) *Tetrahedron* **29**, 449.
4. Ellestad, G. A., Evans Jr., R. H. and Kunstmann, M. P. (1969) *Tetrahedron* **25**, 1323.
5. Nawata, Y., Ando, K., Tamura, G., Arima, K. and Itaka, Y. (1969) *J. Antibiotics* (Tokyo) **22**, 511.

* This fungus previously was classified as *Oospora virescens* (Link) Wallr.