

**B127 Isolation and structure elucidation of alkaloids from *Consolida orientalis***Zs. Hajdú<sup>a</sup>, J. Hohmann<sup>a</sup>, P. Forgo<sup>b</sup>, E. Varga<sup>a</sup> and I. Máthé<sup>a</sup><sup>a</sup> Department of Pharmacognosy, University of Szeged, Eötvös u..6, H-6720 Szeged, Hungary. <sup>b</sup> Department of Organic Chemistry, University of Szeged, Dómtér 8, H-6720 Szeged, Hungary.

Diterpene alkaloids have attracted considerable interest because of their complex structure, interesting chemistry, and noteworthy physiological effects. This specific type of alkaloids occurs in certain species of the Ranunculaceae, Garryaceae, Compositae, Saxifragaceae, and Rosaceae. Structurally, two categories of compounds can be differentiated: the highly functionalized C<sub>19</sub> norditerpenoid alkaloids, and the C<sub>20</sub> diterpene alkaloids with two or three oxygen functions. Norditerpene alkaloids have been found to exert antiinflammatory, analgesic and various cardiovascular effects, and also inhibitory activity against acetylcholinesterase.

In the course of a search for biologically active compounds from Hungarian Ranunculaceae species, we have examined the alkaloidal constituents of *Consolida orientalis* (Gay) Schrödiger, a species widely distributed in the Iberian peninsula and in south-eastern parts of Europe, and occurring abundantly in south-eastern Hungary. Previous phytochemical studies demonstrated the occurrence of lycotoxine type alkaloids in *C. orientalis* collected in Spain and in Turkey.

The present paper reports the isolation and structure elucidation of a new norditerpene alkaloid, 18-demethylpubescentine, together with four known compounds, 14-demethyltugaconitine, takaosamine, gigactonine and delcosine, obtained from a Hungarian population of *C. orientalis*. The compounds were isolated from the methanolic extract of the whole fresh plants using combined chromatographic methods. Extensive NMR studies, including <sup>1</sup>H,<sup>1</sup>H COSY, HSQC, HMBC and NOESY experiments, resulted in complete and unambiguous <sup>1</sup>H assignments of all compounds and the reassignment of some <sup>13</sup>C NMR chemical shifts for previously known compounds.

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**B128 Biogenetically diverse secondary metabolites from the fungus *Aspergillus versicolor* isolated from the marine sponge *Xestospongia exigua***R. Ebel<sup>a</sup>, W.H. Lin<sup>b</sup> and R.A. Edrada<sup>a</sup><sup>a</sup> Institut für Pharmazeutische Biologie, Heinrich-Heine-Universität Düsseldorf, Universitätsstr. 1, Geb. 26.23, 40225 Düsseldorf, Germany. <sup>b</sup> National Research Laboratories of Natural and Biomimetic Drugs, Peking University, No. 38 Xueyang Road, 100083, Beijing, Peoples Republic of China.

In the search for new bioactive compounds from the sea, increasing attention is being given to microorganisms such as bacteria and fungi as potential sources of new natural products (1,2). Recent examples for secondary metabolites from marine sponge-derived fungi discovered by our own group include microsphaerones A and B (3), novel  $\gamma$ -pyrones from *Microsphaeropsis* sp. (isolated from the sponge *Aplysina aerophoba*), while a previous examination of the same fungus yielded inhibitors of protein kinases, namely betaenone derivatives and anthraquinone congeners (4).

In the present study, we examined an isolate of the fungus *Aspergillus versicolor* which we obtained from the marine sponge *Xestospongia exigua* collected in Indonesia. Following cultivation in a sea water based medium, six derivatives of 4-methoxy-2,6,7-trimethyl-1,4-dihydro-2H-3,5-dioxaphenanthren-8-one named aspergiones A to F as well as aspergillitine (2,6,7-trimethyl-5-oxa-3-aza-phenanthren-8-one), representing novel angular tricyclic chromones were obtained from the mycelia and culture filtrate. Aspergillitine is one of the rare examples in nature of fungal-derived polyketides in which a nitrogen atom instead of an oxygen is incorporated into a heterocyclic system. Further investigation of the same fungal strain yielded a series of nine structurally unusual C<sub>21</sub> terpenoids derived from 3-hexanoyl-6-hydroxy-1,1-dimethyl-1,4a,9,9a-tetrahydro-2-oxa-fluorene-5-carbaldehyde (aspergillones A to D) and 4-hydroxy-1-[5-hydroxy-2-(3-methyl-but-2-enyl)-phenyl]-non-1-en-3-one (asperones A to E), respectively, which apparently share a common biogenetic origin.

The structures of the new natural products were established based on extensive one and two dimensional NMR spectroscopic studies (<sup>1</sup>H, <sup>13</sup>C, COSY, HMQC, HMBC, NOE difference spectra) as well as on mass spectral analysis.

**References:** 1. Faulkner, D.J. (2001) Nat. Prod. Rep. 18: 1-49. 2. Pietra, F. (1997) Nat. Prod. Rep. 14: 453-464. 3. Wang, C.-Y. et al. (2002) J. Nat. Prod. 65: 772-775. 4. Brauers, G. et al. (2001) J. Nat. Prod. 64: 651-652.