A255 Sesquiterpene lactones from the aerial parts of *Centaurea spinosa* and their cytotoxic/cytostatic activity against human cell lines *in vitro*

V. Saroglou [a], *A. Karioti* [a], *K. Dimas* [b], *C. Demetzos* [a] *and H. Skaltsa* [a]

[a] Department of Pharmacognosy & Chemistry of Natural Products, School of Pharmacy, University of Athens, Panepistimiopolis, Zografou, GR – 157 71, Athens, Greece. [b] Papanikolaou Research Center of Oncology. Department of Biochemistry, St. Savvas Hospital, GR – 115 22, Athens, Greece.

Continuing our research on the chemical constituents from the aerial parts of *Greek Centaurea* sp., we report here the isolation and identification of sesquiterpene lactones **1-6** from *C. spinosa* L., a species belonging to the section *Acrolophus* (Cass.) L. (1). The isolation was proceeded according to the Bohlmann isolation method (2). The structures of the sesquiterpene lactones **1-5** were elucidated by spectroscopic methods, particularly high-field NMR spectroscopy. Compound **1**, 8α-O-(3,4-dihydroxy-2-methylenebutanoyloxy) sonchucarpolide [= 4-*epi*-malacitenolide], is a new naturally occurring eudesmanolide. Besides compound **1**, four known sesquiterpene lactones were isolated, namely 8α-O-(3,4-dihydroxy-2-methylenebutanoyloxy)-15-oxo-5,7αH,6βH-eleman-1,3,11(13)-trien-6,12-olide (**2**), methyl 8α-O-(3,4-dihydroxy-2-methylenebutanoyloxy)-6α,15-dihydroxy-elema-1,3,11(13)-trien-12-oate (**3**), 8-O-(4-acetoxy-5-hydroxyangeloyl)salotenolide (**4**), as well as the germacranolides cnicin (**5**) and 4′-acetylcnicin (**6**), major constituents of the plant. Cytotoxic/cytostatic activity of the fractions, as well as of the isolated compounds was tested against various human cell lines (SF268, H460, MCF7, OVCAR3, BLD1) (3). Compounds **2**, **5** and **6** were found to be the most active.

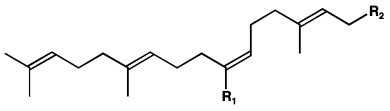
References: 1. Georgiadis Th. (1980), Contribution à l'étude phylogénétique du genre Centaurea L. (Sectio Acrolophus (Cass.) DC.) en Grèce. Thesis, Université de Provence – Aix Marseille I, 286 pp. **2.** Bohlmann F. et al. (1984), Phytochemistry 23: 1979-88. **3.** Maswadeh H. et al. (2000) Anticancer Res. 20: 4385-4390.

A256 Herbal remedies traditionally used against malaria: phytochemical investigations of *Microglossa pyrifolia* (Asteraceae)

I. Köhler [a], *K. Jenett–Siems* [a], *C. Kraft* [a], *K. Siems* [b], *D. Abbiw* [c], *U. Bienzle* [d] *and E. Eich* [a]

[a] Institut für Pharmazie (Pharmazeutische Biologie), Freie Universität Berlin, Königin–Luise–Strasse 2-4, D–14195 Berlin, Germany. [b] AnalytiCon Discovery GmbH, D-14473 Potsdam, Germany. [c] Department of Botany, University Legon-Accra, Accra, Ghana. [d] Institut für Tropenmedizin, Medizinische Fakultät Charité der Humboldt–Universität zu Berlin, D-14050 Berlin, Germany.

Microglossa pyrifolia (Lam.) Kuntze (Asteraceae) is a traditional plant remedy, which is used against fever and malaria in Ghana (1). Continuing our bioassay–guided fractionation of *M. pyrifolia* (2), we isolated another five compounds from active fractions: the furanoditerpenes (+)–strictic acid, (+)–hardwickiic acid, 10α–nidoresedic acid, 10β–nidoresedic acid, and the new geranylgeraniol derivative 1–acetyl–6*E*–geranylgeraniol–19–oic acid **1**. Evaluation of the antiplasmodial activity in our *in vitro* test system against *P. falciparum* revealed the following results: the previously isolated 6*E*-geranylgeraniol-19-oic-acid **2** (IC_{50} values: 4.3 µg/ml [PoW], 5.2 µg/ml [Dd2]), and the semi–synthetic derivative 19–hydroxy–6*E*–geranylgeraniol **3** (IC_{50} values: 5.7 µg/ml [PoW], 16.2 µg/ml [Dd2]) showed moderate activity, whereas the new natural compound 1–acetyl–6*E*–geranyl–geraniol–19–oic acid **1** was inactive.



	R_1	R_2
1	COOH	$OCOCH_3$
2	COOH	OH
3	OH	OH

References: 1. Dokosi, O.B. (1998) Herbs of Ghana, Ghana Universities Press Accra, 313–314. **2.** Köhler, I. et al. (2001) International Symposium of the Phytochemical Society of Europe, 12.–14.9.2001, Lausanne, Switzerland.