Asian Journal of Chemistry Vol. 9, No. 4 (1997), 889–890

Phenolics from *Abies Cephanolica* and *Abies Borisii-Regis*

MARIA COULADIS*, TOM MABRY† and EVMORFIA VERYKOKIDOU‡
Division of Pharmacognosy
Department of Pharmacy, University of Athen
Panepistimioplis-Zografou, Athens 157 71, Greece

In the present notes, the authors describe the extraction and characteristics of phenolics from *Abies cephanolica* and *Abies borisii-regis*.

The essential oils of *Abies* (Pinaceae) are used in perfumery and medicinally in catarrhal diseases of urogenital tracts, chronic rheumatism as well as nasal drop oils or inhalations.[1] *Abies sibirica* needles extract is effective on DMBA-induced tumor growth and exhibits also macrophage functional activity.[2] In Greek folk medicine, several use of turpentine from *Abies cephalonica* Loudon are known.

The needles of *Abies cephalonica* were collected from the mountain Pamassos (Greece) in April 1995. The needles of *Abies borisii-regis* Mattf. were collected from the mountain Katara (Greece) in July 1995. Voucher specimens are deposited in the Herbarium, Laboratory of Pharmacognosy, University of Athens (ATPH).

In the present study 1 kg of dried and powered needles of *Abies cephalonica* and *Abies borisii-regis* were extracted with 80% aqueous methanol. The extracts were concentrated *in vacuo*. The concentrate was partitioned sequentially between water and four organic solvents (petroleum ether, methylene chloride, ethyl acetate and n-butanol). The ethyl acetate and n-butanol layers were fractionated by flash chromatogrphy (silica gel 60 H, Merck) using successively hexane, methylene chloride and methanol 50% as eluents. The collected fractions were purified over Sephadex LH-20 columns eluted with methanol. *Abies cephalonica* afforded rhamnosyl-vitexin, kaempferol 3-O-glucoside, quercetin 3-O-rutinoside, myricetin 3-O-galactoside, myricetin 3-O-glucoside, myricetin 3-O-rhamnoside, myricetin 3-O-rutinoside, isorhamnetin 3-O-rhamnoside, catechin and epicatechin as the major metabolites. *Abies borisii-regis* afforded rhamnosyl-vitexin, kaempferol 3-O-glucoside, quercetin 3-O-rutinoside, myricetin 3-O-galactoside, myricetin 3-O-glucoside, kaempferol 3-O-rutinoside, kaempferol 3-O-galactoside, and quercetin 3-O-glucoside.

The structures of the above compounds were confirmed by their chromatographic behaviour, spectral data (UV, ^{1}H-NMR) and co-chromatography with authentic samples according to standard methods.[3] Detailed information on the work up procedures and copies of the orginal spectra can be obtained from the author of correspondence.

†Department of Botany, The University of Texas at Austin, Austin, Texas 78713, USA.

This is the first report on the occurrence of these compounds in the genus *Abies*.

ACKNOWLEDGEMENTS

We thank pharmacist Dr Th. Constandinidis for the identification of the plant material. The work was supported by the Robert A. Nelch Foundation, Grant 130.

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(*Received*: 16 June 1997; *Accepted:* 1 July 1997) AJC-1321