

A097 GC-MS analysis and radical scavenging activity of essential oils from Nigeria and Cameroon

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The essential oils of eighteen Nigerian/Cameroonian medicinal plants used in folk medicine to treat a variety of diseases were analysed in quality and quantity by Gas chromatography and Mass spectrometry.

This are specifically oils from *Monodora myristica* (Gaertn) Dunal – seeds, *M. tenuifolia* Benth. – seeds, *Hyptis graveolens* Poit. – leaves, *Uvaria chamae* P. Beauv. – root bark, *Zanthoxylum leprieurii* Guill. et Perr. – fruits, *Cleistopholis patens* Engl. et Diels – stem bark and root bark, *Ocimum basilicum* L. – leaves, *O. canum* Sims – leaves, *O. gratissimum* L. – leaves, *Balsamocitrus camerunensis* Letouzey – fruit peels and leaves, as well as *Citrus sinensis* Osbeck, *C. aurantium* L., *C. aurantifolia* Swingle, *C. reticulata* Blanco and *C. paradisi* Macfad – fruit peels. The composition of the oils of *B. camerunensis* has not been reported before. The main constituents were β -pinene, α -pinene, germacrene D, sabinene and isocaryophyllene.

The compounds were identified by mass spectral comparison with data bases and ref. (1,2) as well as chromatography with reference compounds and by comparison of linear retention indices with literature (1,2,3). The research was made in connection with an examination of a potential radical scavenging activity. The abilities of the volatile oils to act as non specific donors for hydrogen atoms or electrons were checked using the diphenylpicrylhydrazyl radical (DPPH). Oils from fifteen plants showed positive results, but a comparison of the IC₅₀ values of quercetin and oils showed that the oils with the highest activity (*Ocimum* oils) still had an radical scavenging activity which was about 30 times lower than that of quercetin.

References: **1.** D. Joulain and W. A. König (1998) The Atlas of Spectral Data of Sesquiterpene Hydrocarbons, E.B. Verlag, Hamburg. **2.** Adams, R.P. (1995) Identification of Essential Oil Components by Gas Chromatography/Mass Spectrometry, Allured Publishing Corporation, Carol Stream, Illinois. **3.** N. W. Davies(1990) J. Chromatogr. 503 1-24.

A098 Isolation of antioxidant compounds from *Eriophorum scheuchzeri* using MPLC and CPC

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In our studies on alpine plants, several plant extracts have been tested for their antioxidant potential in relation to their specific exposure to strong UV irradiation. Among these, the MeOH extract of *Eriophorum scheuchzeri* Hoppe (Cyperaceae) revealed the presence of various radical scavengers in TLC autography with the DPPH (2,2-diphenyl-1-picrylhydrazyl) radical as a spray reagent. The extract has been subjected to a phytochemical investigation and several bioactive constituents have been isolated by means of MPLC and CPC. The antioxidant agents include two triglycosylated flavonoids, a methoxyflavonoid (tricin) and a phenylpropane derivative. Tricin was found to be also active against *Cladosporium cucumerinum* while other antifungal agents are still under investigation. The structures of the isolated compounds were elucidated by classical spectroscopic methods including UV, NMR and MS. The isolation of other antioxidant constituents has been targeted by HPLC of the crude extract followed by microfractionation and detection with DPPH. As plants of the *Eriophorum* genus have been little investigated, a related species, *E. angustifolium* Honckeny, was analysed by LC/UV/MS. A comparison of the metabolite profile of both species revealed important similarities. On-line data revealed also the presence of various isoflavones in both species. Studies of variation of the antioxidant composition of these plants in relation to altitude and light exposure are foreseen.