A087 Composition and antioxidant activity *in vitro* of the essential oil of *Thymus bracteosus* in comparison to *Thymus vulgaris*

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The composition of the essential oil and the antioxidant properties of the dried herbs of *Thymus bracteosus* Vis. ex Benth (Lamiaceae), a plant endemic to the Dinaric Karst, were investigated to find out if *T. bracteosus* can be used as herbal drug in the same way as *T. vulgaris*. The composition of the essential oil was analysed by GC/FID and GC/MS techniques. A data base was used for automatic identification of GC/MS peaks, linear retention indices were compared with published data or authentic compounds. GC/MS analysis of *T. bracteosus* essential oil (yield after hydrodestillation 0.06%) revealed the presence of 83 compounds. Out of them 65 substances were identified, representing 92% of the total components. The major compounds of the oil are α-pinene (6.3%), myrcene (7.1%), β-caryophyllene (9.6%), trans-β-farnesene (6%) and germacrene-D (11.4%). Analysis of *T. vulgaris* oil (yield after hydrodestillation 2.5%) showed the presence of 80 compounds, 64 of which were identified, representing 96.8% of the total compounds. The main constituents are *p*-cymene (37.8%) and thymol (36.7%). Differences of the essential oils of the two investigated plant species were also caused by the variation of the content of monoterpenes (*T. bracteosus* 28.9%, *T. vulgaris* 95.1%) and sesquiterpenes (*T. bracteosus* 62.2%, *T. vulgaris* 1.1%). As *T. bracteosus* is not fulfilling the requirements of the pharmacopoeias (DAB, OEAB, Ph. Helv.: yield at least 1.2% and 1.5% resp.) it cannot be used pharmaceutically in the same way as *T. vulgaris*. The essential oils of the two *Thymus* species were also investigated on their radical scavenger capacity measuring photometrically the disappearance of DPPH* (1) (*T. vulgaris* IC_{50} 15.88 µg/ml, reference rutin IC_{50} 3.01 µg/ml). Furthermore, the ability of the test samples to inhibit peroxidation of membrane lipids was tested (2) (*T. vulgaris* IC_{50} 44.20 µg/ml, reference fisetin IC_{50} 7 µg/ml). The essential oil of *T. bracteosus* did not show any antioxidant activity in both test systems.

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A088 Lignicolous fungi as potential natural antioxidants

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In the last decade higher (Basidiomycetes) fungi became of great importance as sources of pharmacological active substances. Among them, lignicolous fungi are found to be of particular medicinal significance. Althought a wide variety of biological activities of fungi were evaluated (1), their antioxidant ability have not been examined so far. In the present study, the effect of following lignicolous fungi: *Ganoderma applanatum*, *Ganoderma lucidum*, *Meripilus giganteus* and *Flammulina velutipes* on the Fe^{2+}/ascorbate induced lipid peroxidation (LP) and free radical production is investigated. In the experiment MeOH and $CHCl_3$ extracts of dry fungi scorocarpus were used. MeOH extract of *G. aplantatum* (10 mg/ml) exhibited highest inhibitory effect (61.52%) on LP in liposomes. All $CHCl_3$ extracts were less potent in reducing LP. The inhibitory activity was in dose dependent manner. Free radical scavenging capacity (RCS) was evaluated by following the effect of fungi extracts on OH radicals, generating in Fenton reaction (2), and measuring their ability to neutralize DPPH (2,2-diphenyl-1-picrylhydrazil) stable radical form, and transform it into reduced form (3). Althought the RSC on OH radicals was very low, examined extracts exhibited very high DPPH scavenging activity. Highest DPPH-RSC was obtained with MeOH extract of *G. lucidum* (IC_{50}= 7.5 µg/ml) and *G. applanatum* (IC_{50}= 10.3 µg/ml), the lowest activity was obtained with *F. velutipes* (IC_{50}= 300 µg/ml). $CHCl_3$ extracts of both *Ganoderma* also expressed strong DPPH-RSC (IC_{50}= 16.25 µg/ml and 19.00 µg/ml, respectively).

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