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**A101 Evaluation of the free radical scavenger activity of *Hypericum perforatum* alcoholic extracts***Bruno C. Silva and Alberto C.P. Dias*

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*Hypericum perforatum* alcoholic extracts are widely used as antidepressant phytopharmaceuticals. The phytochemical composition of these extracts, rich in phenolic compounds like flavonoids, strongly suggests that they could have antioxidant properties.

We prepared an ethanolic solution (80%) of *H. perforatum* plants (collected in the North of Portugal, Braga) at a concentration of 90 mg dw/ml. Hexane, ethyl acetate, butanol, and aqueous extracts were obtained by sequential liquid-liquid extraction. The ethyl acetate fraction was fractionated over a Shephadex LH-20 column. All the fractions and the total extract were analysed by HPLC-DAD and the major phenols were identified and quantified. We used the DPPH (1,1-diphenyl-2-picrylhydrazyl) test to evaluate the scavenger free radical capacity of the total extract and fractions. The total ethanolic extract exhibited an IC<sub>50</sub> value of 0.3 mg dw/ml. All the fractions showed capacity to scavenge the DPPH. The best scavenger activities were observed in one fraction containing quercetin type glycosides and other one containing similar compounds plus caffeoylquinic acids. The IC<sub>50</sub> values for these fractions, for an equivalent biomass basis, were around 1.2 mg dw/ml. Based on the data, we can conclude that *H. perforatum* extracts have antioxidant potential and that, among other compounds, flavonoids and caffeoylquinic acids contribute to this activity.

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**A102 Exploring *Allium* species as source of potential medicinal agents***D. Štajner*<sup>a</sup>, *N. Milić*<sup>a</sup>, *J. Čanadanović-Brunet*<sup>b</sup> and *A. Kapor*<sup>c</sup>

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It has been shown that *Allium* species could prevent tumor promotion, cardiovascular diseases and aging, processes that are associated with free radicals. Therefore the *Allium* species of both cultivated (*A. nutans* L., *A. fistulosum* L., *A. vineale* L., *A. psekemense* B. Fedtsch, *A. cepa* L., *A. sativum* L.) and wild (*A. flavum* L., *A. sphaerocephalum* L., *A. atroviolaceum* Boiss, *A. schenoprasum* L., *A. vineale* L., *A. ursinum* L., *A. scorodoprasum* L.) species from various locations were studied in order to detect the antioxidative properties of leaves. The leaves were examined on the antioxidative enzymes activities (catalase, peroxidase, superoxide-dismutase, glutathione-peroxidase), the quantities of non-enzymic antioxidants (reduced glutathione and total flavonoids), the contents of soluble proteins, vitamin C, carotenoids, chlorophylls a and b as well as the quantities of malonyl-dialdehyde and ·OH and O<sub>2</sub><sup>-</sup> radicals. Using contemporary spectroscopic fluorescent method, lipofuscin, "plant age pigments" were determined. ESR spectroscopy was used to follow the decrease of oxygen radical quantities in the presence of *Allium* species phosphate buffer (pH 7) extracts. The obtained results showed that *A. ursinum* L. had the best antioxidant properties due to a very high quantity of total flavonoids, high contents of carotenoids and chlorophylls a and b and very low quantities of toxic oxygen radicals in investigated leaves. ESR signal of DMPO-OH radical adducts in the presence of *A. ursinum* L. phosphate buffer (pH 7) extract was reduced for 94.3%.

**References:** 1. Štajner, D. et al. (1999) *Phytother. Res.* 13, 333-336. 2. Morbidoni, L. et al. (2001) *Journal of Herbal Pharmacotherapy*, 1(1), 63-83.