

59th International Congress and Annual Meeting of the Society for Medicinal Plant and Natural Product Research

Date/Location: 4th–9th September 2011, Antalya, Turkey
President: Prof. Dr. K. Hüsnü Can Başer

Dear Colleagues,

It is my great pleasure and honour to hold the 59th International Congress and Annual Meeting of the Society for Medicinal Plant and Natural Product Research on September 4–9, 2011 in Antalya, Turkey. This congress series has been organized annually since 1953 and has become the most important and popular congress in Europe in its respected field. It is the first time the congress is organized in Turkey. Turkey is a large peninsula bridging the east and the west at the junction of two continents and has been a passage way between Europe and Asia and even Africa. Due to its geographic location Turkey has been a melting pot of civilizations, cultures and nations, and is full of history and home to diverse traditions. It is a land of many firsts since history starts here. Thanks to its climatically and phytogeographically unique position and its transect ranging from sea level (0 m) to the peak of the Ararat mountain (5137 m) the flora of Turkey is rich and diverse with over 12,000 flowering plant taxa recorded of which 33% are endemic. Anatolia is the land of Galenus of Pergamon and Dioscorides of Anavarza. Pedanius Dioscorides, a physician in the Roman Army had written his famous *Materia Medica* in the 1st century AD. His birthplace Anavarza is in Kozan, Adana in Southern Turkey not too far from Antalya. The 59th Congress has attracted global attention and there are participants from all parts of the world. Its scientific level is high thanks to the efforts of the Scientific Committee. High rate of rejects were due to the meticulous work of the reviewers who gave it time and effort to keep the scientific level as high as possible.

Main topics of the Congress are as follows:

- New Trends in Pharmacognosy
- Traditional and Natural Medicines
- Lead Finding from Nature
- Antimicrobials – What's next?
- Endophytes – Importance in Pharmacognosy
- Natural Immune Enhancers
- Nutraceuticals, Cosmeceuticals, Functional Foods – Prevention of Metabolic Diseases
- Essential Oils – Analysis, Bioactivities, Uses, Therapeutical Potential
- Biotechnology and Nanobiotechnology
- Advances in the Analysis of Natural Products

Ten plenary and two keynote lectures will be presented by distinguished scientists. 73 short lectures will be presented in three parallel sessions. Numerous researchers will be able to report their research findings in 900 poster presentations. In addition, young researchers will be able to present their papers at two parallel Young Researchers Workshops. There will also be three more Permanent Committee Workshops of the GA on regulatory affairs, pharmacology, agriculture and quality of natural products. An additional workshop will be held on Traditional Chinese Medicine (TCM). 31 lectures will be presented in the workshops. All in all over 1100 scientific presentation will be made at the congress.

I would like to thank the Executive and the Advisory Board members of the GA for their help and encouragement during the preparatory stages of the Congress. I wish to extend my grateful thanks to Georg Thieme Verlag KG for processing such a huge number of abstracts in a short time. My special thanks go to the members of the Organizing Committee and to the Congress Organizing Company FTS who have done their utmost to offer you a successful, satisfying and enjoyable congress.

I wish you all a fruitful congress which I hope will strengthen old friendships and develop new ones in a friendly, scientific and cultural atmosphere. I hope everybody enjoys their stay in sunny Antalya, gets the opportunity to discover hidden beauties of the region and Turkey, and takes home new scientific knowledge and unforgettable memories.

Prof. Dr. K. Hüsnü Can Başer
 President of the 59th International Congress and Annual Meeting of the Society for Medicinal Plant and Natural Product Research

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PL4

Inter-population variation in phenolic content of *Teucrium chamaedrys* L. from the localities in the Balkan Peninsula

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Total phenolic content and flavonoid concentrations in methanolic extracts obtained from *Teucrium chamaedrys* L. in five natural populations of the Balkan Peninsula and a garden population were investigated and compared. The above-ground parts of plants were collected during the flowering phase and the methanolic extracts were prepared. The total phenolic content of the extracts was determined using Folin-Ciocalteu reagent and expressed as gallic acid equivalent. The obtained values varied between 142.04 mg GA/g and 265.91 mg GA/g. The concentration of flavonoids was determined using AlCl₃ and expressed as rutin equivalent. The obtained values ranged between 55.66 mg Ru/g and 90.48 mg Ru/g. The highest phenolic content was found in the plants collected from the mountain areas (Bulgaria, Serbia, Bosnia and Herzegovina) and somewhat lower content was found in plants from Mediterranean localities (Montenegro, Croatia). The lowest level was found in the extract obtained from the cultivated plant (Greece). The highest concentration of flavonoids was found in the plants from Mediterranean localities (Croatia, Montenegro), while the levels were lower in the other samples and ranged between 50 and 70 mg Ru/ml. On the basis of comparative analysis, the plants collected at higher altitude localities were found to be richer in total phenolics, while higher concentration of flavonoids was found in *T. chamaedrys* from Mediterranean localities. A cultivar of *T. chamaedrys* had lower concentration of phenolics in comparison with natural populations. The results obtained in the analysis point out that the concentration of phenolics depend on the ecological properties of the plant habitats. Acknowledgement: Ministry of Science and Education, Republic of Serbia (III41010)

PL5

Phytochemical and pharmacological studies of *Ficus auriculata* Lour. (Family Moraceae) cultivated in Egypt

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This study scientifically examined the phytochemistry, antibacterial and anti-inflammatory potencies of two extracts of *Ficus auriculata* Lour. Eight known compounds, including: betulinic acid, lupeol, stigmaterol, bergapten, scopoletin, β-sitosterol-3-O-β-D-glucopyranoside, myricetin and quercetin-3-O-β-D-glucopyranoside were isolated from the petroleum ether, chloroform and ethyl acetate fractions of alcoholic extracts of the leaves and fruits of *Ficus auriculata*. The structures of these compounds were elucidated on the basis of various spectroscopic methods. This is the first report on compounds separation from *Ficus auriculata* (Moraceae). Concerning the biological studies, the results revealed that both extracts were effective against gram + ve bacteria (*Staphylococcus aureus*) and gram – ve bacteria (*Escherichia coli*) by agar well diffusion method. However, ethanolic extract of leaves exhibited greater antibacterial activity than the ethanolic extract of fruits. Meanwhile, the ethanolic extract of leaves at dose of 500 mg/kg exhibited significant anti-inflammatory effect using carrageenin-induced rat hind paw oedema model. Keywords: *Ficus auriculata*, Moraceae, antibacterial activity, anti-inflammatory

PL6

Moringa oleifera-treated dry season-turbid Well-water in Enugu Metropolis, Nigeria: A comparative evaluation

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Water and sanitation services provide a cost-effective solution for alleviating the impact of water-borne diseases. Polluted water is gateway to infectious pathogens leading to a both acute and chronic-diseases worldwide. With the ultimate objective of contributing to the improvement of the quality control of drinking water, we report here, the main application of *Moringa oleifera* Lam. seed extract in the treatment of 25 natural underground well-water samples randomly collected from the three most populous cities in Enugu Metropolis, in southeastern Nigeria. The assessed parameters were salinity, pH, conductivity, total dissolved solid (TDS), total solids (TS), total suspended solids (TSS), turbidity and microbial load before and post-treatment with both alum (as a standard agent) and *M. oleifera* aqueous and ethanolic extracts at equal concentrations of 60 mg/L. The result of the finding showed the ability of *M. oleifera* seed extract to remove organic matter (natural humic substances and micropollutants) thereby avoiding water degradation (mainly bad odours and taste, formation of disinfection by-products such as trihalomethanes) and in addition to having a potent antimicrobial activity which alum naturally lacked. The ethanolic extract of *M. oleifera* had broader spectrum of antibacterial activity than aqueous extract. The alum-treated water samples showed increased salinity and pH in addition to other by-products. From the foregoing, the use of *M. oleifera* aqueous and ethanolic seed extracts as alternative biocompatible flocculants in water treatment in Enugu Metropolis could be recommended. Acknowledgement: This work is a product of research for a Fellowship award of Nigerian Institute of Science Laboratory Technology (NISLT).

PL7

The effect of *Salvia virgata* on GSH-Px Activities of HepG2 cells.

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Turkey is an important country for *Salvia* species. The flora of Turkey includes 88 species of the genus *Salvia*. *Salvia virgata* Jacq, which has shown to be extremely rich with the phenolic compounds that allows this species to be an important member of antioxidant plants. This study was performed to investigate the effect of different *Salvia* extracts on GSH-Px activities of HepG2 hepatocarcinoma cells. The 70% methanol and water extracts were prepared from the aerial parts of *S. virgata* collected from Bursa, Turkey. Gallic acid and rosmarinic acid were used as positive controls. The cells at a number of 2 x 10⁵ cells per well were incubated for 24h with the extracts and the positive controls under %5 CO₂ at 37 °C. The GSH-Px activities of the cells were than analysed spectrophotometrically via a multifunctional microplate reader. Phenolics rich extract of aq. methanol has enhanced the GSH-Px activity more than water extract where their effect was just in between the rosmarinic acid and gallic acid positive controls. These results reveal that both extracts mostly the phenolics rich extract of aq. methanol supports the antioxidant activity in the hepatocarcinoma cell line and these results confirm that it can further effect the glutathione reserves of these cells. This preliminary results needs to be further investigated over the GSSG, GSH and total glutathione and selenium levels. Keywords: *Salvia Virgata*, HepG2, GSH-Px, antioxidant References: 1. Kosar M, Goger F, Baser KHC (2008) J Agric Food Chem 56(7):2369 – 74 2. Tosun M, Ercisli S, Sengul M, Ozer H, Polat T, Ozturk E (2009) Biol Res 42(2):175 – 81 3. Tepe B (2008) Bioresour Technol 99(6):1584 – 8