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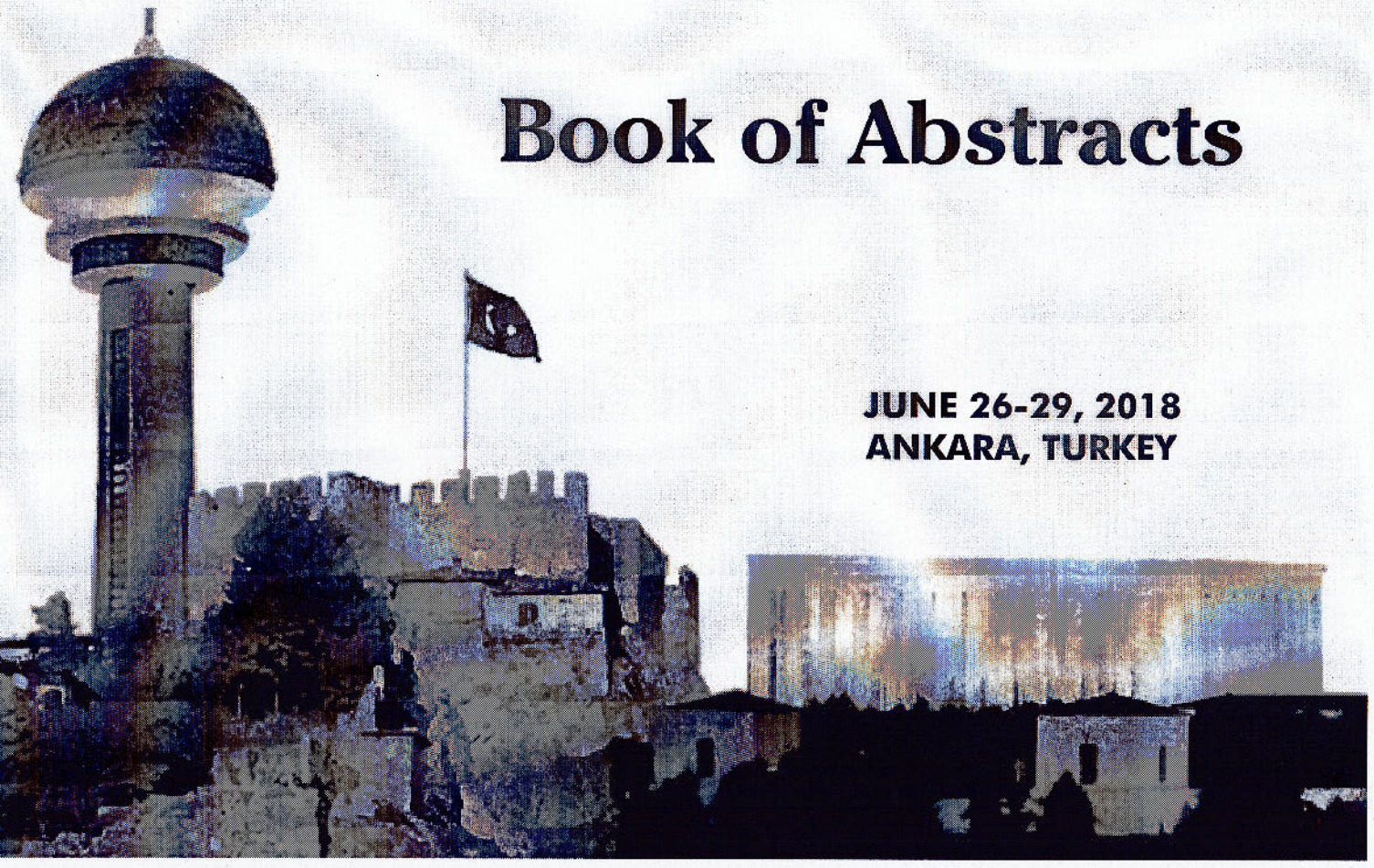

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P-076: ESSENTIAL OIL AND SPME ANALYSIS OF IPOMEA PURPUREA

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INTRODUCTION:

The genus Ipomoea comprises the largest number of species (500-600 species) within the Convolvulaceae (1) and found throughout subtropical and tropical regions of the world. Several species of Ipomoea have been used as an herbal medicine to treat rheumatism, hydrocephaly, diabetes, hypertension, dysentery, fatigue, arthritis, meningitis, and kidney ailments etc. Some of these species showed various biological activities such as antimicrobial, anticancer, anti-inflammatory, analgesic, hypotensive, spasmolitic, and anticoagulant. Phenolic, glycolipids, and alkaloid type compounds were the most common active natural components mentioned from these plant extracts. In the literature, essential oil (EO) and SPME analyses of Ipomea purpurea were not mentioned. In this work, essential oil, wet and dry SPME of I. purpurea were investigated by GC-FID/MS (2-4).

MATERIALS AND METHODS:

The plant (I. purpurea) used in the study was collected from the Şinik-Akçaabat, Trabzon (215 g, wet) at a height of 355 meters. Identification of the plant was made by Prof.Dr. Salih Terzioğlu and herbarium number was given. EO analysis and SPME method were done according to the literature.

RESULTS:

GC-FID/MS analyzes for EO,SPME for the fresh and dry plant of I. purpurea have revealed 33, 12, and 11 natural compounds within the ratio of 79.1%, 99.6% and 99.4%, respectively. Caryophyllene oxide (30.6%), germacrene-D (28.2%), and trans-(β)-caryophyllene (22.5%) were the major component in the EO of I. purpurea. D-limonene (42.1% and 42.6%) and germacrene-D (34.2% and 33.6%) were the main compounds in both wet and dry I. purpurea, respectively.

CONCLUSIONS:

Terpenes and terpenoids constituent of I. purpurea were the major class of compounds. Wet and dry SPME analysis of I. purpurea gave almost the same compounds with small differentiation in the ratio.

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P-078: EVALUATION OF ANTIMICROBIAL ACTIVITY IN SECONDARY METABOLITES FROM PLECTRANTHUS ZEYLANICUS: A SEARCH FOR NOVEL DISINFECTANTS

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INTRODUCTION:

Plectranthus zeylanicus Benth (Lamiaceae), is a perennial herb widely utilized in Ayurvedic and folk medicine in Sri Lanka for thousands of years (1). Although the plant is traditionally used as an antimicrobial remedy, its pharmacological features and the phytochemistry have not been comprehensively explored yet to rationalize the reported ethnobotanical significance. Therefore, the present study was undertaken to evaluate the antimicrobial potential of different extracts of P. zeylanicus and to characterize the bioactive phytochemicals thereof.

MATERIALS AND METHODS:

Organic extracts prepared from the whole plants of P. zeylanicus were tested against Gram positive and Gram negative bacteria; Enterococcus faecalis, Staphylococcus aureus, Staphylococcus saprophyticus, Escherichia coli, *Pseudomonas aeruginosa*, Salmonella serotype Typhi and nine clinical isolates of methicillin-resistant Staphylococcus aureus (MRSA). Besides, the antifungal activity was evaluated against the opportunistic fungal pathogen, Candida albicans. Disc diffusion and broth micro-dilution methods were employed in the determination of the antimicrobial activity of these extracts. Based on the preliminary observations, the most active extract was subjected to activity guided fractionation and the isolated compounds were extensively studied for the antimicrobial activity. Furthermore, the quantitative surface disinfectant assay was employed to determine the disinfectant potential of the compounds against MRSA strains on smooth and rough surfaces.

RESULTS:

A potent antimicrobial activity was observed in dichloromethane extract, hence subjected to the activity guided fractionation. The extract was also analyzed by gas chromatography coupled mass spectrometry, and it revealed the presence of phytosterols, fatty acids, sesquiterpenes, acyclic diterpenes and several other metabolites. Among the compounds isolated from this extract, the structure of the most active compound was elucidated as 7α-acetoxy-6β-hydroxyroyleanone by liquid chromatography coupled mass spectrometry and nuclear magnetic resonance data. This compound displayed a prominent antibacterial activity especially against S. aureus, S. saprophyticus, *P. aeruginosa* and MRSA isolates with a minimum inhibitory concentration (MIC) in the range of 31.25-250 µg/mL. Furthermore, the compound has inhibited the growth of C. albicans and also exhibited a significant disinfectant potential against MRSA isolates in comparison to the commercially available disinfectants.

CONCLUSIONS:

The MIC values observed as 31.25 µg/mL for 7α-acetoxy-6β-hydroxyroyleanone was significantly better than the MIC values reported in literature for most of the ubiquitous phyto-constituents. Further studies on disinfectant activity and self-assembly properties of the isolated secondary metabolites are in progress in the pursuit of new antimicrobial/ disinfectant agents.

ACKNOWLEDGEMENTS:

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P-079: INHIBITORY EFFECT OF ANCHUSA STRIGOSA BANKS & SOL. ON 5-LIPOXYGENASE ENZYME IN VITRO

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INTRODUCTION:

Anchusa strigosa, a member of the Boraginaceae family, is distributed in temperate climatic regions, especially in the tropical zone and in the Mediterranean (1). The aerial parts of Anchusa strigosa were used in digestive disorders and cancer treatment as folk medicine in Turkey (2, 3). Phytochemical studies on Anchusa strigosa have shown that pyrrolizidine alkaloids and phenolic compounds were isolated from the roots (4).

MATERIALS AND METHODS:

The roots of the Anchusa strigosa were collected in Malatya, cleaned and then sliced into small pieces and dried. Methanol extract was prepared for activity studies. n-Hexane, dichloromethane, ethyl acetate, n-butanol and residual aqueous fraction were obtained from the methanol extract respectively, by liquid-liquid fractionation. The extract and fractions were applied to the 5-lipoxigenase (5-LOX) inhibition assay. The determination of 5-LOX (soybean) inhibition levels of all samples was performed according to the reference method with a spectrophotometric kinetic method adapted to some modifications (5).

RESULTS:

As a result, when the percentages of inhibition on the enzyme of the liquid-liquid fractions and the methanolic extract were evaluated, it was found that the ethyl acetate fraction inhibited 67.96% of the enzyme at 100 µg / ml with the highest activity. Serial dilutions from the ethyl acetate fraction were prepared for determining the IC50 value, the IC50 value was determined to be 40.875 µg / ml. Nordihydroguaiaretic acid (NDGA) was used as the standard reference and the IC50 value was determined to be 6.95 µg / ml.

CONCLUSIONS:

According to our results, Anchusa strigosa may be a potential source for obtain an anti-inflammatory drug. Our further studies are in progress.

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