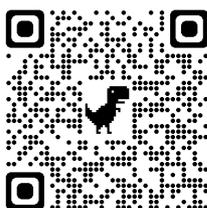


CURRENT RESEARCH TOPICS IN PHARMACY: *Herbal Drug Research*

November 24th, 2022 14.00 PM ISTANBUL

FOR REGISTRATION:



First Session- Moderator: Betül OKUYAN 14.00-15.30 PM

Welcome- Prof. Hatice Kübra ELÇİOĞLU

Safety of herbal drugs- Assist.Prof. Ayfer BECEREN
Marmara University, Istanbul, Turkey

Antibacterial herbal effect applied in cosmetic emulsion preservation- Dr.Rezarta SHKRELI
Aldent University, Tirana, Albania

R&D studies in the development of traditional herbal medicinal products- Prof. İ. İrem TATLI ÇANKAYA
Hacettepe University, Ankara, Turkey

Second Session- Moderator: Betül OKUYAN 16.00-17.30 PM

The role of metabolomics in medicinal plant science-Prof.Emirhan NEMUTLU
Hacettepe University, Ankara, Turkey

Using diterpenoids from *Plectranthus* spp. As starting tool in drug development- Assoc.Prof.Patricia RIJO
Lusofona University, Lisbon, Portugal

Herbal drugs as novel antibacterials- Assoc. Prof. Entela HALOCI
University of Medicine, Tirana, Albania

The potential of certain phytochemicals as essential nutrients- Asst.Prof. Lukasz CIESLA
The University of Alabama, Tuscaloosa, USA

Chair

Prof. Hatice Kübra ELÇİOĞLU

Vice Chair

Prof. Levent KABASAKAL & Assoc. Prof. Esra TATAR

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SYMPOSIUM

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THE POTENTIAL OF CERTAIN PHYTOCHEMICALS AS ESSENTIAL NUTRIENTS

Lukasz CIESLA 

Department of Biological Sciences, The University of Alabama, USA

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Diet rich with vegetables, fruit and herbs has been associated with lowering the risk of noncommunicable aging associated diseases. Vitamins, minerals and certain dietary factors present in unprocessed plant-based products have been considered to be responsible for beneficial effects of dietary patterns rich in these products. Oxidized fatty acids and their derivatives have been previously shown to play an important role in signaling in many different cell types. We hypothesize that other classes of membrane associated lipophilic compounds together with n-3 fatty acid oxidation products play important role in cellular signaling. The following are several examples of compounds that are stable soft electrophiles or form stable soft electrophiles upon oxidation: flavonoids, vitamin E vitamers, numerous carotenoids or omega-3 fatty acids. All these compounds have been associated with lowering the risk of aging-associated diseases, by for example actively targeting inflammatory responses. Our work identified a specific group of lipophilic soft electrophiles that exert protection in *Drosophila* and mammalian models of Parkinson's disease.

Our data unravel specific structural features of selected electrophiles that are essential for signaling activity. Lipidomic and proteomic experiments further indicate that essential soft electrophiles interact with electrophile-responsive regulatory cellular proteins especially rich in reactive nucleophiles such as cysteine residues. Soft electrophilic molecules modulate cellular activity through non-enzymatic post-translational modifications, previously mostly considered as indicators of oxidative/metabolic stress and disease. I will discuss the evidence that lipophilic soft electrophiles associating with cell membranes may also play an essential role in human nutrition, following the concept of vitamin P proposed by the discoverer of vitamin C. Dr. Szent-Györgyi.

Keywords: soft electrophile, essential nutrient, diet, phytochemical