1ST INTERNATIONAL SYMPOSIUM OF BIODIVERSITY STUDIES

SYMPOSIUM ABSTRACT E-BOOK

May 23-25, 2022

1st International Symposium of Biodiversity Studies

A Virtual Symposium

May 23-25, 2022

Hosted by the

National Botanical Garden of Türkiye, Ankara, TÜRKİYE

Symposium Abstract Proceedings

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PREFACE

Dear colleagues and researchers,

The main objective of the '1st International Symposium of Biodiversity Studies', in which a multidisciplinary approach is aimed in biological diversity researches, is to organize an event to celebrate 'May 22 - The International Day for Biological Diversity'. The Symposium has the same name and perspective with the 'Biodiversity Studies' Journal, which is an international, peer-reviewed, accessible, free and scientific journal, published by National Botanical Garden of Türkiye.

The Symposium was organized as an online symposium and the official language of it was English. However, translation from English to Turkish and from Turkish to English was made by the translators during the Sessions. More than 400 registrations from different countries were made to the symposium from universities, public institutions and organizations, the private sector and non-governmental organizations.

The Symposium covered all the research areas that are subject of Biology, Agriculture, Forestry, Landscape and Pharmacy as Botany, Zoology, Mycology, Hydrobiology, Entomology, Forestry, Microbiology, Conservation Biology, Ecology and Medicinal Plants. Abstracts submitted from 11 different countries and 105 of them were accepted. Presented 96 abstracts of them are included in this Abstract E-Book. Also 8 invited speakers, who are experts of their specific research areas from different countries, presented their researchs published in this E-Book. Moreover, full-texts of some abstracts were evaluated to be published in the 'Biodiversity Studies' Journal.

I am thankful to the members of the Scientific Committee for all their valuable contributions to the Symposium. I also would like to thank Organizing Committee members for their hard work and the Sponsors for their supports to organize this Symposium.

Finally, I would like to thank all the participants of the '1st International Symposium of Biodiversity Studies' for making the Symposium an efficient and sustainable platform for Biological Diversity.

I am looking forward to meet with all the researchers in the 2nd Biodiversity Studies Symposium.

Symposium Chair

Dilaver ARSLAN

ORAL PRESENTATIONS

MEDICINAL PLANTS SESSION

The biological activities of endemic *Ballota pseudodictamnus* subsp. *lycia*

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Abstract

The genus *Ballota* L. (Lamiaceae) includes species known as boz ot, bal otu, nemnem otu and have medicinal uses among the people. Additionally, it known to be used by the public in the treatment of cough, asthma, headache, nausea, hemorrhoids, wounds and burns. *Ballota* taxa have various phytochemical classes such as essential oils, iridoids, saponins, terpenoids, flavonoids, phenolic acids, tannins, and organic acids. *Ballota pseudodictamnus* subsp. *lycia* is one of the endemic species growing in southwestern Turkey. As a result of our research on the literature a limited number of studies have been found on the biological activities of this species. The aim of this study is to examine the antioxidant, antimicrobial, anticholinesterase and anti-urease activities of different extracts (petroleum ether, chloroform and methanol) obtained from the aerial part of *B. pseudodictamnus* subsp. *lycia.* DPPH, CUPRAC, and FRAP techniques were used to examine the antioxidant properties of plant' extracts. The extracts' anti-urease, anticholinesterase and antimicrobial activity were determined using the Indophenol, Ellman and agar well diffusion method techniques, respectively. While the petroleum ether extract obtained from plant, was found to be effective against *S. aureus, S.epidermidis* and *E. faecalis strains*; its chloroform extract was effective against *S.aureus* and *S.epidermidis* strains and its methanol extract was found to be effective against *Acinetobacter baumannii* strains. It was found that the plant' methanol extract showed the highest antioxidant activity when compared to the other extracts.

Keywords: *Ballota pseudodictamnus* subsp. *lycia,* antioxidant activity, antimicrobial activity, enzyme inhibition

Investigation on biological activities of *Melissa officinalis* subsp. *altissima*

Gülsüm Koç[1]*, Erkan Rayaman[2], Şükran Özdatlı Kurtuluş[3], Mizgin Ermanoğlu[1], Beyza Nur Yılmaz[1], İsmail Şenkardeş[4], Turgut Taşkın[1]

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Abstract
The genus *Melissa* is used as antibacterial, sedative, digestive aid, carminative, diaphoretic and bile secretion enhancer. It is included in the composition of the preparations used during nervous digestive system disorders, psychosomatic heart disorders and migraine. The flowering branches and leaves of *Melissa officinalis* L. subsp. *altissima*. are used as carminative, sedative and its antipyretic effects. It is also used in vascular occlusion, stomach aches, heart ailments, kidney inflammation, cholesterol, blood pressure, and diabetes. According to our knowledge there are not enough studies on these species grown in Turkey. The aim of this study is to examine the antioxidant, cytotoxic, anticholinesterase, anti-urease and antimicrobial activities of plant' various extracts obtained by using the sequential maceration method. In the determination of antimicrobial activity well diffusion method on 6 gram negative, 4 gram positive and 3 yeast strains was used. DPPH, CUPRAC and FRAP techniques were used to examine the antioxidant properties of plant' extracts. The extracts' anticholinesterase, cytotoxic and anti-urease activity were determined using the Ellman, MTT and Indophenol techniques, respectively. In addition, the phenolic contents of the extracts were determined by FCR method. It was found that petroleum ether extract of the plant was effective against *Enterecoccus faecalis* and *Staphylococcus aureus* strains and ethyl acetate extract were effective against *Staphylococcus aureus* strains. The methanol extract of the plant exhibited the highest antioxidant activity when compared to other extracts. It was determined that the petroleum ether extract of *Melissa officinalis* L. subsp. *altissima* has stronger acetylcholinesterase and urease enzyme inhibition potential than its other extracts. Furthermore, in this study the ethyl acetate extract of the plant was found to have high cytotoxic activity.

Keywords: *M. officinalis* subsp. *altissima*, antioxidant activity, enzyme inhibition, cytotoxic activity