

**14th INTERNATIONAL CONFERENCE ON
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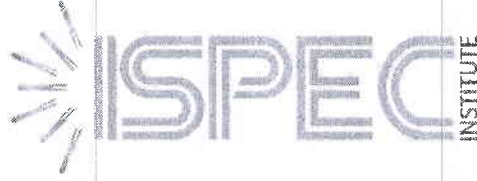
**July 18-19, 2022 / Sivas, TURKEY
Sivas Science and Technology University**

(THE PROCEEDINGS BOOK)

**EDITOR
Assoc. Prof. Dr. Emre BİÇER**

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CONFERENCE PROGRAM

Online Session	Zoom ID Informations
Opening Speech	Zoom Meeting ID: 826 4455 7267 Zoom Passcode: 123456
18.07.2022	Zoom Meeting ID: 826 4455 7267 Zoom Passcode: 123456
19.07.2022	Zoom Meeting ID: 826 4455 7267 Zoom Passcode: 123456

LILIUM CANDIDUM L. (BEYAZ ZAMBAK BİTKİ)'NİN BİYOAKTİF BİLEŞENLERİNİN VE ANTIOKSİDAN AKTİVİTESİNİN BELİRLENMESİ İÇİN KULLANILAN ANALİTİK YÖNTEMLER

Gülbin ERDOĞAN

Marmara University, Faculty of Pharmacy, Department of Analytical Chemistry
ORCID: 0000-0002-6428-5899

Ahmet KURUNÇ

Marmara University, Faculty of Pharmacy
ORCID: 0000-0003-2888-3557

ÖZET

"Beyaz Madonna zambak" olarak da adlandırılan *Lilium candidum* L. (Liliaceae) cinsi, aynı zamanda Liliaceae familyasına ait eski bir bitkidir ve esas olarak Doğu Asya, Avrupa ve Kuzey Amerika dahil olmak üzere Kuzey Yarımküre'nin ılıman bölgelerinde yayılış gösterir. Dünyada yaklaşık 115 tür bulunmaktadır. *Lilium* cinsi ülkemizde 7 tür ve 8 taksonla temsil edilmekte olup, bu taksonlardan ikisi endemiktir. *Lilium candidum*, kesme çiçek endüstrisinde süs bitkisi olarak kullanılmak üzere Orta Doğu ve Türkiye'de yüzyıllardır yetiştirilmektedir. *Lilium* cinsinin bitkileri, kimyasal çeşitlilik açısından zengindir ve onlarca yıldır doğal ürün kimyası araştırmalarının merkezi olmuştur. Kimyasal bileşenleri ayrıca hastalıkları tedavi etmek için kullanılacak önemli tıbbi bileşik kaynakları olan alkaloidler, flavonoidler, fenolik asitler, steroller ve saponinler dahil olmak üzere birçok ikincil metaboliti içerir. Sekonder metabolitleri önemli miktarda doğal ilaç ve besin kaynağıdır. *Lilium candidum*, eski zamanlardan beri iltihaplı yaraların, cilt iltihaplarının, ülserlerin, yanıkların ve çeşitli yaralanmalarının tedavisinde kullanılmıştır. Kadın hastalıkları ve kas ağrılarında çok kullanılır. Ayrıca fonksiyonel bileşenler, antioksidanlar, nutrasötikler ve kozmetik ürünler olarak *Lilium* bitkilerinin potansiyel uygulamaları vardır. Birçok uçucu bileşikleri, GC-MS, HPLC, LC-MS ve LC-MS/MS analizi kullanılarak belirlenmiştir. Soğan özleri, toplam fenolik, toplam flavonoid ve toplam flavonol içerikleri ile güçlü antioksidan aktivite sergiler. Her bir ekstraktın toplam fenolik asit içeriği tayinleri, Folin-Ciocalteu, DPPH, FRAP, CUPRAC, ABTS, ECL ve ORAC yöntemlerine göre belirlenir. Son çalışmalar, *Lilium* soğanlarının, canlı organizmalarda oksidatif stres kaynaklı hasarı önlemede önemli rollere sahip birçok doğal flavonoid içeren radikal süpürücü ile potansiyel bir doğal antioksidan kaynağı olarak gıda ve farmasötik uygulamalara hizmet edebileceğini ileri sürmüştür.

Anahtar Kelimeler: *Lilium candidum*, Spektrofometre, Antioksidan Aktiviteler, Biyoaktif Bileşenler.

ANALYTICAL METHODS USED FOR DETERMINATION OF BIOACTIVE COMPONENTS AND ANTIOXIDANT ACTIVITY OF LILIUM CANDIDUM L. (WHITE LILY PLANT)

ABSTRACT

The genus *Lilium candidum* L. (Liliaceae), the so called "White Madonna lily" is also an ancient plant, which belongs to the Liliaceae family, is primarily distributed in temperate regions of the Northern Hemisphere, including East Asia, Europe and North America and There are approximately 115 species in the world. The genus *Lilium* is represented by 7 species and 8 taxa in our country, and two of these taxa are endemic.

Lilium candidum has been grown for centuries in the Middle East and Turkey for use in the cut flower industry as ornamental plants. Plants of the genus *Lilium* are rich in chemical variety and have been the center of natural product chemistry research for decades. Its chemical constituents also include many secondary metabolites, including alkaloids, flavonoids, phenolic acids, sterols and saponins which are important sources of medicinal compounds that can be used to treat diseases. Secondary metabolites of its are significant sources of plenty natural medicines and nutrients. *Lilium candidum* helped from when ancient times in the cure of suppurative and inflamed wounds, skin inflammations, ulcers, burns, and various injuries Pieroni. It is so used for gynecological problems and muscle pain. It also highlights the potential application of *Lilium* plants as functional ingredients, antioxidants, nutraceuticals and cosmetic products.

The presence of many volatile compounds was identified using GC-MS, HPLC, LC-MS, and LC-MS/MS analysis. Onion extracts exhibit strong antioxidant activity with their total phenolic, total flavonoid, and total flavonol contents. The total phenolic acid content of each extract was determined according to the method, Folin–Ciocalteu, DPPH, FRAP, CUPRAC, ABTS, ECL, and ORAC methods. Recent studies have suggested that *Lilium* onions may serve food and pharmaceutical applications as a potential source of natural antioxidants, with many natural flavonoid-containing radical scavengers having important roles in preventing oxidative stress-induced damage in living organisms.

Keywords: *Lilium candidum*, Spectrophometre, Antioxidant Activities, Bioactive Components.



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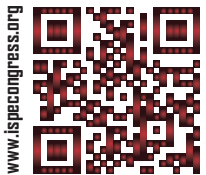
in oral and technical presentation, recognition and appreciation of research contributions to

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