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ANTIMICROBIAL ACTIVITY OF PLANTAGO LANCEOLATA L. (RIBWORT PLANTAIN) WITH ETHNOBOTANICAL SIGNIFICANCE

MELİKE ERSİN

Dokuz Eylül University, Faculty Of Science, Biology
ersinnmelike@gmail.com

ELİF GÖNÜL

Dokuz Eylül University, Faculty Of Science, Biology
eliiffgnl@gmail.com

EZGİ NUR DUMAN

Dokuz Eylül University, Faculty Of Science, Biology
ezginrduman@gmail.com

GİZEM GÜL

Dokuz Eylül University, Institute Of Science And Technology, Biology
gizeemmgull@gmail.com

DİLAY TURU

Dokuz Eylül University, Institute Of Science And Technology, Biology
dilayturu@gmail.com

Prof. Dr. KEREM CANLI

Dokuz Eylül University, Faculty Of Science, Biology
kerem.canli@deu.edu.tr

Abstract

In recent years, the indiscriminate use of antibiotics and improper treatment practices worldwide have led to microorganisms developing resistance to antibiotics, posing a significant threat to human health. Antibiotic resistance complicates the treatment of microbial infections and necessitates the development of new therapeutic methods. Among alternative treatment approaches, the use of plant-derived compounds has gained attention. Evaluating the antimicrobial activity of plants provides potential natural solutions for the treatment of infectious diseases. Due to their natural antimicrobial compounds and their long history of use in traditional medicine, plants have become a critical area of research. In this context, *Plantago lanceolata* L., commonly known as "ribwort plantain," belonging to the Plantaginaceae family, has been used in traditional medicine for the treatment of respiratory infections, skin inflammations, digestive disorders, and various infectious diseases. This study investigated the antimicrobial activity of this plant. The antimicrobial activity of *Plantago lanceolata* was tested using the disk diffusion method. The study included 16 standard bacterial isolates, 7 foodborne bacterial isolates, 11 multidrug-resistant (MDR) bacteria, 11 clinical bacterial isolates, 1 standard yeast strain, and 2 clinical yeast isolates. The potential antimicrobial effects of the plant were comprehensively analyzed. The results demonstrated inhibition effects on 13 bacterial strains. The most effective results were observed against multidrug-resistant *Staphylococcus aureus* (MRSA+MDR), with inhibition zones measuring 10-12 mm in diameter, and clinical isolates of *Enterococcus faecalis*, with inhibition zones measuring 9-10 mm in diameter. These findings suggest that *Plantago lanceolata* could be a promising natural antimicrobial agent, particularly against resistant bacteria.

Keywords: Disk Diffusion Test, Antimicrobial Activity, *Plantago Lanceolata* L