MAGICAL MANDRAGORA OFFICINARUM L.: UNLOCKING THE SECRETS OF PHYTOCHEMISTRY AND BIOACTIVITIES

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Mandragora Officinarum L. (mandrake) is a perennial herbaceous plant from the nightshade (*Solanaceae*) family, native to the Mediterranean region. The plant has a rich history of uses from the ancient times for its healing and psychotropic properties. However, its wider use has declined due to the presence of tropane alkaloids, which can lead to poisoning, if used improperly.

In general, the number of publications on *M. Officinarum* chemical composition and bioactivities is rather scarce. The majority of the previously performed studies were focusing on its alkaloids. The aim of this study was to fractionate oven and freeze-dried *M. Officinarum* fruits (berries), roots and leafs in to the lipophilic and higher polarity fractions by using consecutive extraction with supercritical CO_2 and pressurized liquids using the increasing polarity solvents and to evaluate the phytochemical composition and antioxidant potential of the fractions obtained. First of all, proximate composition of *M. Officinarum* berries and roots was evaluated by using standard methods. After measuring the quantities of proteins, fats, insoluble fibers, minerals and moisture content, extraction with supercritical CO_2 was carried out.

The content of lipophilic fractions isolated at 350MPa pressure and 50°C temperatures was approximately 0,5% for the roots and 8% for fruits. Additionally, the total amount of phenolic compounds and ABTS radical scavenging activity were also determined in the roots, fruits and leafs of this plant. The same assays were also carried out not only with dry raw material but also with various extracts: CO_2, ethanol, acetone and water.