STUDY OF THE LICHENS ANTIMICROBIAL ACTIVITY

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Introduction. In recent years the interest in herbal medicines significantly increased. Medicinal plants do not have a harm, have a softer effect, less toxic, non-addictive and allergenic, with no side effects, which are their advantages over synthetic crude drugs. At the present time to enhance medicinal plant raw material resources very little-studied objects, include lichens, which variety is more than 26000 species worldwide, has been used. Lichens produce secondary metabolites with strong antimicrobial effects – lichen acids, the most important among which are usnic, barbatinique and squamatic.

Aim. The aim of our study was to determine the antimicrobial properties of extracts obtained from lichens, growing in Kharkiv region.

Results and discussion. Among lichens growing in Ukraine, the genera Cladonia, Usnea, Lecanora, Ramalina, Evernia, Parmelia, Alectoria are well-known by their medicinal properties. The genera Evernia and Parmelia (family Parmeliaceae) are most often found in Kharkiv region. Evernia has a bushy thallus and grows primarily on the oak trunk and branches. Parmelia has foliose thallus, grows on the deciduous and coniferous trees trunks and branches. We studied Parmelia sulcata and Evernia prunastri, which were collected in the autumn in the National nature Park "Gomolshanskie Lesa"recreational area. For species identification we investigated the thallus, fruit bodies, organs for substrate attachment morphology and anatomy and biochemical properties.

The lichens antimicrobial activity is determined by gram-positive and gram-negative microorganisms test cultures growth inhibition identifying. It is a result of secondary metabolites action. Research are carried out by the agar diffusion method. Quantitative parameters are tested by the serial dilution method. For the antimicrobial properties studying the water and alcohol extracts of lichen materials are used. Maceration is carried out with 40% and 70% ethanol, the ratio of dry lichen and extractant is 1:7, temperature is (27±2)0C, infusion period is 24 h. The aqueous extraction conditions are: the dry crushed raw materials and water ratio 1:5, boiling water bath for 15 minutes, water digestion at (22±2) ^{0}C during 45 minutes, percolation.

Conclusion. At the present time the problem of bacterial infections development is still relevant in medical science. The national medicine and pharmacy are in great need in drugs having the antimicrobial activity. The lichens antimicrobial activity study enables the new effective and safe drugs creation.