

ANTIMICROBICAL ACTIVITY OF LIPOPHILIC EXTRACT OF *FRAGARIA MOSCHATA* L. LEAVES

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Introduction. *Fragaria moschata* L. - perennial herbaceous plant, species of the genus Strawberry (*Fragaria* L.) belong Rosaceae family. It is known that the fruits of this plant contain a wide range of biologically active substances (BAS) and are used as a vitamin and dietary product in many countries of the world.

Since *Fragaria moschata* L. successfully cultivated, its leaves are available raw materials and promising source of BAS. It was found that in the lipophilic fraction of *Fragaria moschata* L. leaves there are fatty acids, chlorophylls, terpenoids, higher alcohols. It is known that these BAS can exhibit antimicrobial activity. So, scientific interest is the study of antimicrobial activity of lipophilic fraction of leaves of *Fragaria moschata* L.

The **aim of our study** was to investigate the antimicrobial activity of lipophilic complex of *Fragaria moschata* L. leaves against the most important in the epidemiological significance bacterial cultures.

Materials and methods. The object of the study was the lipophilic extract of leaves of *Fragaria moschata* L. collected in June 2016. We are used air dry raw material. Extract was obtained by used the method of circulating extraction. Extractant – chloroform.

For determining the activity of the lipophilic complex we used the standard bacterial cultures: *Staphylococcus aureus* ATCC 25923, *Escherichia coli* ATCC 25922, *Pseudomonas aeruginosa* ATCC 27853, *Proteus vulgaris* ATCC 4636, *Bacillus subtilis* ATCC 6633, *Candida albicans* 885-663. To determine the antimicrobial activity, the bacterial cultures were cultivated on meat pepton agar at 37°C for 24 hours. Antimicrobial activity was measured as a radius in mm to give a zone of inhibition.

Determination of sensitivity of microorganisms was performed by successive twofold serial dilutions in liquid nutrient medium. The method is based on titration in liquid nutrient medium investigational antibacterial preparation by successive dilutions certain volume of liquid in the first test tube using these controls - nutrient medium, which does not receive the drug. In all the test tubes were added daily allowance agar suspension of bacterial cultures.

The results were determined after 48 - 72 hours to assess growth delay of micro-organisms in the test tubes containing the appropriate dilution of the drug. The last tube with growth retardation (clear broth) corresponded to minimum inhibitory

concentration of antibiotic tested against the strain. For evaluation the bactericidal properties the drug from 2 - 3 tubes the last lack of growth been doing application to dense nutrient media.

After 24 - 48 hours incubation in thermostat that determined the lowest concentration of antibiotic drug in vitro, crop, of which has not given of growth and taking the minimum bactericidal concentration. For most microorganisms as nutrient media used peptonnyy meat broth, for mushrooms - nutrient media Saburo.

Determination of the sensitivity of bacteria was performed by diffusion in agar. In the Petri dish poured 10 ml of molten nutrient uncontaminated environment. After solidification of this layer placed on it sterile stainless steel cylinders (height - 10 mm inner diameter – 6 mm) and filled them "infected" agar of 15 ml.

For this purpose, melted and cooled agar agar added daily washings cultures of microorganisms. For the second layer of agar solidification cylinders were removed in the the wells formed, made investigational antimicrobial agents in volume ($0,3 \pm 0,05$) ml.

Crops were incubated at 37°C for 24 - 48 hours, then take into account the results of measuring the area of growth delay test microbe. In an experiment used a 2% solution extracts.

Results and discussion. As a result of the study it was found that the lipophilic extract of *Fragaria moschata* L. leaves shows a high activity against *S.aureus* and *B.subtilis*, moderate against *E. coli*, *P.vulgaris* and *C.albicans*. The results are shown in Table 1.

Table 1

Indicators of delayed growth of microorganisms under the action of lipophilic complex of *Fragaria moschata* L. leaves

Growth retardation of microorganisms, mm, ($M \pm m$)					
<i>S.aureus</i> 25923	<i>E. coli</i> 25922	<i>P.aeruginosa</i> 27853	<i>B.subtilis</i> 6633	<i>P.vulgaris</i> 4636	<i>C.albicans</i> 885-663
$25,5 \pm 0,6$	$14,7 \pm 0,7$	x	$22,5 \pm 0,8$	$15,0 \pm 0,8$	$15,7 \pm 0,7$

Conclusions. Established the antimicrobial activity of lipophilic complex of *Fragaria moschata* L. leaves. The results of the study found that the resulting lipophilic complex has a pronounced antibacterial activity against *S.aureus* and *B.subtilis*. Taking into account the obtained results, it can be assumed that this substance can be used to create medicinal forms for external use for the treatment of skin diseases caused by *S.aureus* (eczema, dermatitis, dermatosis).