

Microbiological studies of dental gel with plant extracts

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Oral diseases are one of the biggest general health problems of life and are expensive to treat. Dental caries, gingivitis and periodontal disease in children and adults are among the most important preventable global infectious diseases in Ukraine.

Due to the side effects and the resistance that pathogenic microorganisms build against the common antibiotics, much recent attention has been paid to extracts and biologically active compounds isolated from plants used in herbal medicine.

Sage (*Salvia officinalis*) is one such product exhibiting multiple benefits and has gained considerable importance in clinical research. It reduces bleeding, inflammation and swelling of the gums. Drugs from *Urtica dioica* (Nettle) also are perspective for the treatment of dental diseases. Antiinflammatory, antimicrobial, hemostatic properties are represented from its pharmacological activity. The combination of extract *Salvia officinalis* with *Urtica dioica* in developed dental gel provides comprehensive complex therapeutic effect.

The purpose of this work is to study antimicrobial activity of gel for treatment of dental disease.

The antimicrobial activity of gel determined by the diffusion method of "wells" with determining the diameter of the zones of growth inhibition microorganisms. The following test strains of microorganisms were used for evaluation of antimicrobial activity of medications: *Staphylococcus aureus* ATCC 25923, *Escherichia coli* ATCC 25922, *Pseudomonas aeruginosa* ATCC 27853, *Bacillus subtilis* ATCC 6633, *Proteus vulgaris* ATCC 4636, *Candida albicans* ATCC 885/653.

Experimental data suggest that drug has a pronounced antibacterial activity against a number of microorganisms. Gel shows most high activity to standard strains of spore cultures *Bacillus subtilis*, gram-positive cultures *Staphylococcus aureus* and gram-negative *Pseudomonas aeruginosa* culture.