Study of antimicrobial activity of gel for treatment of dental disease

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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, Nigeria and the world in general and according to latest WHO report on dental disorders, affects about 60% of the world adult population.

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.

Aloe vera is one such product exhibiting multiple benefits and has gained considerable importance in clinical research. Dental uses of Aloe vera are multiple. It is extremely helpful in the treatment of gum diseases like gingivitis, periodontitis. It reduces bleeding, inflammation and swelling of the gums. It is a powerful antiseptic in pockets where normal cleaning is difficult, and its antifungal properties help greatly in the problem of stomatitis, aphthous ulcersof the mouth**.**

Drugs from Oak bark also are perspective for the treatment of dental diseases. Anti-inflammatory, antimicrobial, hemostatic properties are represented from it pharmacological activity.

The combination of dense extract of oak bark with Aloe Vera in developed dental gel are provides comprehensive complex therapeutic effect (antimicrobial, anti-inflammatory, reparative, haemostatic). Composition and technology of gel based on plant extracts (Aloe and oak bark) was developed at the Department of Drug Technology.

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, Basillus 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 gram-positive cultures Bacillus subtilis, Staphylococus aureus and gram-negative P. aeruginosa culture.