# RHEOLOGICAL STUDIES OF GEL "ALOE-DENTAL" FOR USE IN DENTISTRY

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In recent years, dental disease has been linked to other health problems throughout the world. It is a problem that at least, person experience during their lives time and the most common cause of tooth loss in adults.

Increasing demands of modern treatment of inflammation of the oral mucosa and inflammatory periodontal disease led to targeted searches and create new and effective drugs. For the rational pathogenetic therapy should design of multicomponent drugs with effects on different parts of the pathological process. Despite the variety of domestically drugs for use in dental practice on the pharmaceutical market of Ukraine, the effectiveness of treatment of periodontal disease is inadequate, confirming the relevance and timeliness of development of new effective drugs for the treatment of dental diseases.

As know, the choice of dosage form is essential to ensure the effectiveness of drug therapy of different diseases. In particular, significant progress in the provision of dental care has been achieved through the use long-acting dosage forms in the form of gels.

The aim of this work was to develop of science-based composition of the gel base for use in dentistry, in particular for the treatment of inflammatory diseases of the oral mucosa and periodontal disease. To ensure pharmacotherapeutic effect of the drug biologically active substances of natural origin were entered: thick oak bark extract, which shows antimicrobial, hemostatic activity and dry aloe extract, which has a pronounced anti-inflammatory property and accelerates regeneration.

To achieve the desired therapeutic effect must consider not only the pharmacological properties of the active ingredients, but also the properties of the excipients. According to a number of authors in creating dental gels should be used hydrophilic gelling agents.

Based on the analysis of references for further study as gelling agents we have chosen carbomer with index "R", intended for oral use and applications on mucous membranes, hydroxyethylcellulose and sodium alginate, forming a crystal-clear gel at a concentration of 1-3%. The resulting samples were analyzed by organoleptic characteristics. **S**amples with hydroxyethylcellulose were destroyed immediately after preparation, introduction of the API into samples based on sodium alginate and carbomer in a concentration of 1% leaded to getting of liquid consistence.

The next stage of research was to study rheological parameters of sample gels from carbomer 934 and influence the introduction of active substances on the rheological properties of bases. As the comparator "Kamistad gel" was used ("**S**tada Arzneimittel AG", Germany).

The study was performed using rotational viscometer «Rheolab QC» firm Anton Paar (Austria) with coaxial cylinders loaded metering system type CC27 / **S**. According to the research introduction of active substances with acidic pH reduces viscosity base, but the resulting gel has sufficient viscosity to preserve the gel-like consistency. Under the influence of high shear stress the gel structure was destroyed, while reducing shear stress structural viscosity gel restored.

As a base of a developed gel carbomer 934 in a concentration of 3% was chosen, this will provide a satisfactory structural and mechanical properties and consumer characteristics of developed gel «Aloe-Dental».