

**SYNTHESIS AND STUDY OF THE PROPERTIES  
OF POLYMER FORMS OF TAMARIXIDIN***Amanzholkyzy A., Abdikarim G.G., Abilov Zh.A.,**Zhumagaliyeva Sh.N., Sultanova N.A.*

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Nowadays, compositions based on organic and inorganic polymers such as polymer-clay systems have a great research interest in medicine. The activity of research on such materials is motivated by the possibility of their versatile application, including in the field of medicine as carriers of medicinal substances. Using of extracts of plants with biological active substances as green sources for smart medical forms are significant for biomedical application. Plants of the genus *Tamarix* (comb) of the *Tamaricaceae* (comb) family are a valuable source of various biologically active substances. Natural polymeric carriers of the biological active complex of *Tamarixidin* (TH-10) from the plant *Tamarix Hispida* for the development of soft dosage forms as well as medical hydrogels and films were synthesized and investigated.

The results of the study TH-10 plant extract by ultrasonic extraction showed that the best solution for separating BAS from raw materials is water-alcohol, so the extraction was carried out in 10% water alcohol solution and the number of obtained extractive substances was 37.34%, moisture permeability which shows 1.7%. Polymer forms, such as polymer films and gel ointments of TH-10 based on self-structuring polymers of gelatin (Gel) and bentonite clay (BC) were obtained. Polymer film and gel forms of TH-10 have the following composition: gelatin, bentonite clay, TH-10, glycerin, potassium sorbate. It was found that the activity is intense in the first 30 minutes and stabilizes after 24 hours. As the polymer content in the film increases, the desorption values and the degree of swelling decrease, therefore, compaction of the polymer mesh causes the release of the drug makes it difficult. Mechanical characteristics, such as, strength, limit drop force and tensile limit were determined for each sample. To break the composite film with a ratio of TH-10 and gelatin 7:3, a load of 0.1 kg and 5-7 seconds is enough. Other ratios of components showed sufficient stability, so 9:1 and 8:2 was chosen as the optimal composition for gelatin.

For gel dosage forms, the quantitative values of sorption and desorption were determined. So, for Gel gels, sorption values are typical in the range from 70 to 85 % during the day. The results of studies of the rheological characteristics of the gel forms showed that hydrogel forms based on 13 % Gel-BG are optimal in rheological characteristics, the optimum consistency is 66.717 Pa, 98.79 Pa and 168.87 Pa, correspondingly.

Thus, compositions of polymer films of TH-10 based on gelatin and its compositions with BC proposed, and the dosages of auxiliary components – a plasticizer, a preservative-are proposed. So, films with a content of 10 and 15% glycerol, 10-15% polymer, 1% TH-10, and 0.2% potassium sorbate preservative are proposed for further research.