The aim of research was the evaluation of blood clotting activity and hemostatic effect of chitosan specimens using developed set of laboratory tests and preparation of chitosan with
high blood clotting activity. Chitosan specimens were powdered to the particle size less than 0.25 mm and characterized by in vitro tests including determination of coagulation time of heparinized blood, bulk density of material, swelling of particles in water and Tris-buffered saline, as well as in vivo tests based on estimation of efficacy in controlling hemorrhage from wounds in mice and rats. Using of the developed tests it was revealed that available chitosan specimens (reagent grade, dietary supplements, samples prepared in laboratory) are hemostatically inactive as compared with Celox preparation. We developed a method of activation of above mentioned chitosan specimens to active hemostatic preparations. Some characteristics of chitosan that are significant for blood clotting activity are described. It was demonstrated that high molecular weight chitosan specimens are more effective as hemostatic agents comparing with low molecular weight chitosan specimens.

Key words: chitosan, Celox, hemostatic effect, laboratory tests in vitro and in vivo.

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