

## Effect of silver-containing sorbent on erythrocytes of erythrocyte mass during perfusion *in vitro*

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The effectiveness of the method of hemosorption detoxification of the body in various pathological conditions can be enhanced and corrected by using sorbents modified with various biologically active ingredients. The aim of the study was to study the effect of a silver-containing sorbent on the parameters of erythrocytes of erythrocyte mass under *in vitro* perfusion conditions. Sorbents based on porous aluminum oxide and polydimethylsiloxane with and without nanocluster silver were studied. The porous structure of sorbents and their adsorption activity were evaluated by standard methods. Perfusion of erythrocyte mass through columns filled with sorbents was carried out according to the standard procedure. Morphofunctional parameters of erythrocytes before and after perfusion were studied by scanning flow cytometry. The statistical significance of the differences between the groups was assessed using the Mann-Whitney test and the Student t-test at  $p < 0.05$  (Statistica 7 software package). Analysis of morphofunctional parameters of erythrocytes before and after perfusion showed that all indicators were within normal limits. However, the indicators of the ultimate extensibility of the erythrocyte membrane when using a silver-containing sorbent exceed 1.5 and 2 times the value compared to the indicators for a sorbent without silver and the initial erythrocyte mass respectively. Thus, the sorbent modified with silver does not have a traumatic effect on the morphofunctional parameters of erythrocytes during perfusion. The mechanisms of action affecting the indicators of the ultimate extensibility of the erythrocyte membrane after perfusion with the introduction of nanocluster silver into the sorbent require further research.

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