

The efficacy of the target delivery of drugs by erythrocyte pharmacocytes

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Creation of transport systems for the targeted drug delivery on a basis of autologous cells is an actual problem of medical biotechnology.

Purpose: to increase the antibacterial activity of rifampicin by creation of transport systems for targeted drug delivery.

The method of increasing of antibacterial activity of rifampicin has been developed by using of autologous erythrocytes. Efficacy of the target delivery of drugs by erythrocyte pharmacocytes has been studied in experiments by modeling of abscess of soft tissue.

The experimental studies in vitro and in vivo have revealed the opportunity of creation of high concentration of an antibiotic in the purulent area for a long time at processing by erythrocyte pharmacocytes containing a single dose of rifampicin, unlike local saturation of tissues by an antibiotic.

Efficiency of treatment with application of erythrocyte pharmacocytes has been evaluated by the laboratory and cytological methods. Concentration of drug was defined by the liquid chromatography and microbiological method of diffusion in an agar, using test microbe *Bacillus Subtilis* ATCC 6663.

Results of experiments has shown the concentration of drug in pharmacocytes with high degree of reliability ($p < 0,001$) in 2,5-3,0 times exceeds concentration of drug in supernatant ($21,07 \pm 0,37$ and $7, 7 \pm 0,15$ mg/ml accordingly).

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