ADDITIVE ACTION OF BIOLOGICAL ACTIVE SUBSTANCE – MELAFEN, AND IONS STRENGTH TO ERYTHROCYTES

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Erythrocytes are one of the first targets when introductions of biologically active substance (BAS) in the body, in blood river-bed, occurred, and it were the appropriate experimental objects. BAS, as totaling environments, constantly affect to biologic objects, this is why examined simultaneous action of BAS and changes of some physic-chemical parameters in blood river-bed, in particular - of ionic strength. The ionic strength of solutions is most important parameter of solutions for properties manifestation of biologic objects. It is known that the ionic blood composition varies when some pathology: amount of such ions, as sodium and chlorine, varies. These properties are depended from nutrition, and from functions of internal organs, primarily kidneys. BAS - plant growth regulator melafen (melamine derivative of bisphophinic acid) was tested on impact on dependence of erythrocytes hemolysis from value of solution ionic strength in incubating medium. The erythrocytes were isolated by centrifugation from blood of several mice in physical solution (0,9% NaCl, i.e. 0,15 M NaCl). The changes of ionic strength were reached by additions of concentrated NaCl-solutions for creating the concentration of NaCl, from 0 M up to 4 M in incubating medium for erythrocytes. On the assumption of previous studies [1, 2], the melafen influences were tested when melafen concentrations were from 10^{-12} M up to 10^{-3} M. The hemolysis of isolated erythrocytes was increased in depending of increase of ionic strength at incubating medium under the NaCl concentration (0; 1; 1,5; 2; 2,5; 3; 3,5; 4 M). Our investigation *in vitro* indicated that the melafen large concentrations solutions, that being added to erythrocytes, caused the hemolysis of erythrocytes when low ionic strength (more than 50%) much strengthens. All melafen concentration is smaller than influence (up to 30%) when high ionic strength. In experiences *in vivo*, we obtained the similar picture for low times of melafen injecting to mice body (1hour, 1 day, 3 days) with high level of hemolysis when low concentrations of NaCl up to 0,5M and low level when major doses was being injected. When mice were treated during 8 days, for everyone concentrations of melafen that were injected the similar regularity with hemolysis increasing (on 20-30%) in depending of NaCl concentrations was observed. As a result that was found *in vivo, in vitro* melafen action on erythrocytes hemolysis degree was addition to action of ionic strength changes.

References

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