Annotation

The use of optical methods for studying biological structures allows to perform the measurements without direct mechanical contact with the object of study. In this paper, the physical principle of laser aggregometer technique is discussed, and using it the microrheological parameters of blood in vitro are measured.

The ability of red blood cells to aggregate and disaggregate in flow conditions characterize the microrheological parameters of whole blood. The effect of TiO_2 Rutile RODI nanoparticles with an average size of 250 nm on red blood cell microrheological properties was studied. The blood samples were incubated with nanoparticles in vitro for an hour before the measurements. The concentration of nanoparticles in the blood was determined, below which there are no statistically significant deviations of the measured microrheological parameters from the normal values.