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Ultrasonic method to define human serum blood total protein and protein fractions

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Research of ultrasonic characteristics of biological liquids for purposes of medical diagnostics is the important task. Ultrasonic method to define total protein and protein fractions - albumin, αl -, α2 -, β -, γ - globulin's of human serum blood is discussed. This method is based on the precise measurements of velocity and absorption of ultrasonic waves in serum blood and its modified solutions under different temperatures from range (15-40)0C. The measurements of ultrasonic velocity and absorption in samples serum blood fulfils by means of method ultrasonic interferometer constant length or resonator method. The precision of relative measurements of velocity by means of this method is 10-5 and absorption is 10-3, temperature stability is the order of 10-3 0C. Protein fractions define by means of decision of linear system of equations where in the character of unknown components consider these protein fractions. Comparison of data of different patient obtained by traditional electrophoreses method with data of ultrasonic method shows very high correlation of all protein fractions and total protein. This work was supported by RFBR and Leading Scientific Schools grants.