

INFRARED SPECTROSCOPY OF BLOOD SERUM FROM PATIENTS
WITH MULTIPLE MYELOMA

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A combination of high-resolution agarose gel protein electrophoresis, refractometric analysis and FTIR-spectroscopy was applied to investigate the characteristics of blood serum in patients with multiple myeloma (MM). Analysis of the FTIR spectra of the samples obtained from the serum of MM patients and healthy donors revealed decreasing amount of α -helices and increasing amount of β -sheets in blood serum proteins in MM samples compared to healthy donors. The interaction between the proteins by their β -strands and the stabilization of these protein complexes by forming intermolecular β -layers was assumed. Thus, changes in the functionality of immunoglobulins might be due to the formation of intermolecular complexes involving monoclonal proteins in β -conformation.

Key words: multiple myeloma, FTIR-spectroscopy, protein secondary structure