

The thesis is a literary review summarizing current knowledge about the ultrastructure of myocardium in the overall context of the development and anatomy of the heart. The first part of the study is a summary of heart anatomy and its embryonic development, with emphasis on the morphology of cardiomyocytes. The state of inner cytoarchitecture of myocardial cells and the quality of inter-cellular connection reflects the functionality of the heart. Location and condition of cell compartments reflect the overall condition of the cell. The following part is devoted to the basic microscopic analysis methods suitable for research ultrastructure of cardiac cells. The outcome of this work is a comprehensive overview of the organization of remarkable morphological formations in cardiomyocyte, possible changes in ultrastructure in context of physiological conditions and comparison of microscopic methods with regard to their use in research of cardiomyocytes ultrastructure.