

The presented dissertation summarizes the results of a comprehensive clinical, immunological, and molecular-genetic study of the immune system in patients with cystic fibrosis (CF). This dissertation is structured into six interrelated professional chapters, which cover the following thematic areas:

1. A summary of current knowledge on the molecular-genetic and clinical pathogenesis of CF.
2. A summary of existing findings in the study of the immune system in patients with cystic fibrosis.
3. An investigation of the immune system in CF patients based on the author's own cohort – overview.
4. A summary of existing knowledge on genetic modifiers of the clinical course of CF.
5. A summary of current findings in the study of the interaction between the immune system and infection.
6. Clinical application of immunological methods – determination of antibody titers against *Pseudomonas aeruginosa*.

The introductory overview chapter does not aim to summarize the topic in detail. Rather, it focuses on interesting findings arising from the basic genetic defect in the CF gene. For better clarity and to reduce complexity, the information is presented in the form of tables, images, and graphs.