

The book "DNA analysis – Practice" is addressed for persons involved in the analysis of DNA for practical purposes. It was created by the initiative of Professor Ryszard Słomski, who is a full professor, the head of the Department of Biochemistry and Biotechnology, University of Life Sciences of Poznan, the deputy director for the research at the Institute of Human Genetics, Polish Academy of Sciences in Poznan, a court expert in the field of human genetics and a specialist in laboratory genetics. Professor Słomski is a pioneer in the field of DNA testing for the diagnostic needs and a precursor of the molecular diagnostics dissemination in the country. He was the first to perform studies in the field of the genetic fingerprinting and DNA amplification by PCR, and is involved in the molecular diagnostics of genetic diseases, characterization of new human genes, biotechnology, medical and forensic studies and DNA testing of ancient samples.

All chapters in the book entitled "DNA analysis –Practice" have been prepared by teams dealing with specific subjects and include the scope of history for the introduction of DNA research in practice. There are also examples of the research results, including their data. The book "DNA analysis – Practice" is a continuation of "DNA Analysis - Theory and Practice", edited by Professor Słomski, which appeared in print in number reaching 3,000 copies, attracted a lot of attention and received Award of the Minister of Science and Higher Education in the competition for the best text book and academic manual in 2008.

Today numerous tests performed for medical purposes include in their scope DNA, RNA and protein analysis. However, widespread availability of molecular studies is not synonymous with a full understanding of all steps of work, especially in the aspect of the work carried out in various areas. This book is designed to fill knowledge gaps in this field. The presented issues include the legal and qualitative aspects of molecular tests based on DNA analysis, as well as very valuable guidance for the design, optimization and validation of test methods based on real-time PCR, because of the widespread inclusion of this method for routine molecular assays developed at the Poznan University of Medical Sciences and Institute of Natural Fibers and Medicinal Plants in Poznan.

Based on the research experience of Professor Grzegorz Kurzawski team from the Pomeranian Medical University in Szczecin, subsequent chapters are devoted to the application of molecular DNA analysis in the detection and treatment of cancer. Practical applications of DNA analysis in clinical immunology were presented by the National Consultant Professor Maciej Siedlar team from the Jagiellonian University. The Poznan University of Medical Sciences presented chapters on pharmacogenetics profiling in personalized medicine (Anna Bogacz, Ph.D.) and the importance of studies of genetic polymorphisms in pregnancy (Professor Agnieszka Seremak-Mrozikiewicz).

Certainly, the chapter describing the use of fluorescence in situ hybridization in haematooncology, based on the experience of staff of the Institute of Human Genetics, Polish Academy of Sciences and the Poznan University of Medical Sciences (Associate Professor Małgorzata Jarmuż-Szymczak) is very interesting. There are also issues implemented in the team of Professor Ryszard Słomski related to DNA tests in neuromuscular diseases (Marta Kaczmarek-Ryś, M.Sc.), DNA analysis in twins (Associate Professor Krystyna Cieslik,

Professor Ryszard Słomski) as well as inflammatory bowel disease (Marzena Skrzypczak-Zielinska, Ph.D., Associate Professor Agnieszka Dobrowolska-Zachwieja), which are performed at the Institute of Human Genetics, Polish Academy of Sciences in Poznan, at the Poznan University of Medical Science, at the University School of Physical Education in Poznan and the Poznan University of Life Sciences.

Associate Professor Piotr Gronek from the University School of Physical Education in Poznan presented the chapters on genetics studies in sport. This developing field attracts attention of many scientists. Chapters on DNA testing in forensic medicine and molecular archeology are presented by Professor Ryszard Słomski. The chapters on the use of DNA analysis in biotechnology (Associate Professor Daniel Lipinski, Professor Ryszard Słomski) and methodical section showing the current nomenclature of changes observed at the level of nucleic acids and proteins, which are detected in the studies presented in the above sections are an important extension (Marlena Szalata, Ph.D., Poznan University of Life Sciences).

Keywords: DNA, RNA, PCR, real time PCR, molecular diagnostics, DNA variants, validation of DNA testing

