

## University of Ljubljana, Faculty of Pharmacy Research Group



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Chronic diseases as complex genetic disorders represent one of the most attractive research fields in regard to identification of new diagnostic and therapeutic targets. Over the last 15 years our researchers from the Chair of Clinical Biochemistry research group have been studying the genetic backgrounds and pharmacogenetics of complex diseases like osteoporosis, osteoarthritis, insulin resistance, obesity, and also heavy metal toxicity. With genotype-phenotype association studies, genome-wide analyses and gene expression profiling our researchers want to identify important molecules (biomarkers) and/or pathways in those diseases. As part of the pharmacogenetic studies the group is studying the genetic variations in drug metabolic enzymes and drug transporters of selected antiosteoporotic, anticoagulant, anticancer and immunosuppressive drugs. During the last years our group is focusing on research of micro RNA and other epigenetic mechanisms of cell regulation with implication to personalized diagnostics and treatment of complex diseases.

The researchers from the Chair of Biopharmacy and Pharmacokinetics are strongly involved in various scientific topics in biopharmaceutics, pharmacokinetics, pharmacometrics, PK/PD modeling and pharmacogenetics, particularly in the field of drugs transport from the site of administration to the biophase (e.g., absorption and permeability processes) drug distribution and metabolism. Their services include the development of selective and sensitive assays (LC/MS/MS, HPLC with DAD, FD, RI and ECD detection) for determination of drugs, metabolites, degradation products and endogenous compounds in various matrices.