The principal investigator has been involved in research on personalized medicine at basic research laboratory (Hokkaido University) and advanced treatment hospital (Chiba University Hospital). In clinical practice, the PI has experienced some of cases where the problem of drug treatment could be solved by utilizing genetic information on individual differences in drug responsiveness. However, it was so difficult to predict precisely individual drug responsiveness such as efficacy, side effects, or optimal dosage because of wide non-genetic differences in patient background. At the same time, the PI was noticed that it must be much more important to prevent disease onset than to treat it after onset of disease.

In clinical practice, the PI was focused patients as research target population for individual optimization of drug treatment, but now in Okayama University, the target population has been expanded to people who have not yet developed the disease. Although the research on individualization of treatment is still needed to continue for the people suffer from various disease, but the PI decided to challenge research on disease prevention. We would like to create a scientific basis for individualized either disease prevention or treatment that will lead to personalized medical care before and after the onset of disease.

Current research themes

1. Development of analytical method for suppression of postprandial blood glucose elevation by functional ingredients in food and characterization of responsive population
2. Development of analytical method for blood pressure suppression by non-drug intervention and characterization of responsive population
3. Research on pharmacokinetic prediction of antiepileptic drugs using biomarkers
4. Development of a simple blood concentration measurement method for sleep-improving drugs and clinical application
5. Study on relationship between the expression of molecules controlling pharmacokinetics in lung cancer tissues and patient prognosis
6. Study on relationship between the expression of molecules controlling pharmacokinetics in renal cancer tissue and patient prognosis
7. Clinical study on appropriate use of antiplatelet drugs using genetic information in patients undergoing PCI