

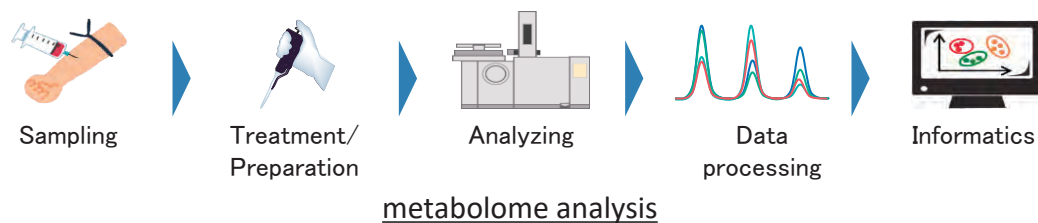
**Principal Investigator**

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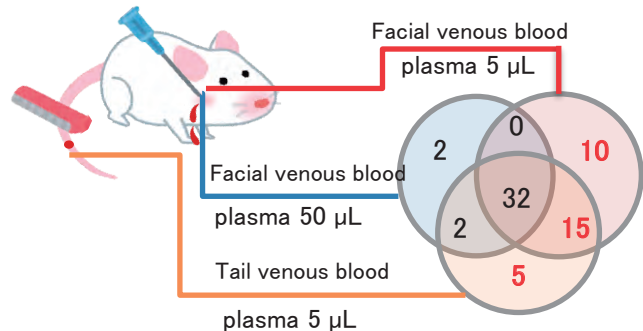
Professor Iichiro SHIMOMURA

### Project Outline

Metabolome analysis, which comprehensively measures metabolites in the body, is useful for specific analysis of phenotypes. Then, it is being used to clarify the mechanism of disease and the action point for pharmacology. However, in reality, not only is proper sampling important, but also skill is required for sample preparations, operation of analytical equipment, and data analysis. We are continuing to develop analysis methods for chronic diseases that are optimal for medical and dentistry research needs under the collaboration with medical, dental and engineering dept..

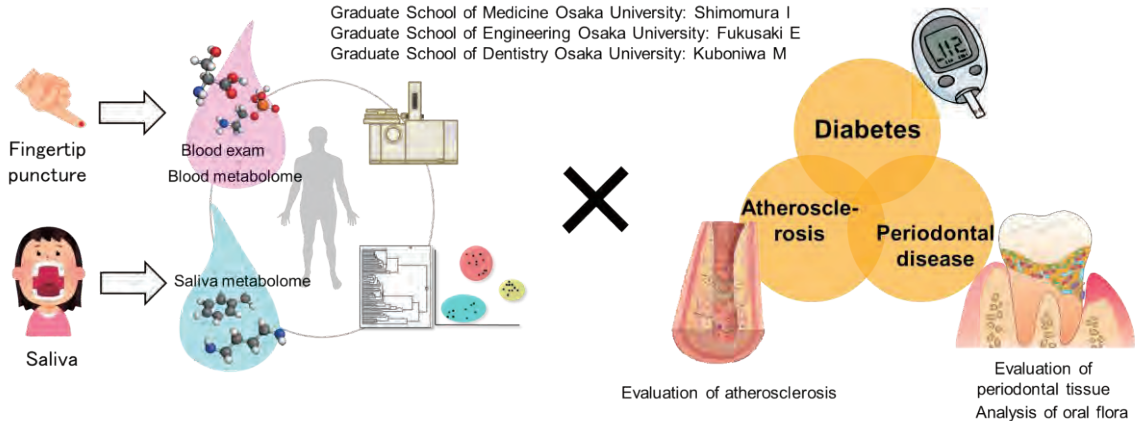


In this project, we constructed a metabolome analysis from small amount of samples for the purpose of reducing the pain on the patient and then the measuring with limited sample volume such as the gingival crevicular fluid. The main aim is the time course analysis such as before and after eating and exercising. The developed methods were able to correlate with the conventional method even for a very small amount of sample. Furthermore, key components that could not be observed by the conventional method can be measured.



### Aim of the MEDENGINE (MEDicine · DENTistry · ENGINEERING) project

Graduate School of Medicine Osaka University: Shimomura I  
 Graduate School of Engineering Osaka University: Fukusaki E  
 Graduate School of Dentistry Osaka University: Kuboniwa M



- Development of minimally-invasive and wide-target technique for human metabolomics study.
- Exploration of biomarkers and therapeutic targets for diabetes-related diseases and periodontal disease.