

Graduate School of Medicine, The University of Osaka

*The Center of Medical Innovation  
and Translational Research*



2026



*Under One Roof*





Graduate School of Medicine  
**The CoMIT Building**

The Center of Medical Innovation  
 and Translational Research



## The CoMIT Building

The Center of Medical Innovation and Translational Research (CoMIT) Building was completed in March 2014 and established as a complex environment for advanced research and educational activities. The Center was jointly financed by a subsidy from the Ministry of Economy, Trade, and Industry and by The University of Osaka own funds. The funds aimed at promoting translational research through multisectorial collaboration, bringing together the industry, academia and government.

### Goals

- To serve as a hub that seamlessly connect education, basic research, bedside, industry, and the society at large in a view to implement innovative solutions to human health.
- To foster a new generation of young personnel equipped with diverse perspectives.

### Organizations

#### ● CoMIT

CoMIT is an R&D institute based on industry-academia-government alliance aiming to develop cutting-edge medical technologies. The center aims to promote open innovation and accelerate industrialization of promising research results in the life sciences.

#### ● Educational Facilities

The first floor - Third floor of the building host comprises state-of-the art facilities for fundamental education and comprehensive training for students of the Faculty of Medicine and residents of The University of Osaka Hospital.

#### ● Department of Medical Innovation (DMI)

DMI is a division of the University Hospital that provides centralized support to translational research in medical technology, independent data management and statistical analysis for interventional trials and analytic research. The DMI also provides medical services for patients from outside Japan and education/training for overseas health care professionals.

## Creating a bright future for medical care through industry-academia collaboration



Dean  
Graduate School of Medicine

*ISHII Masaru*

The Center of Medical Innovation and Translational Research (CoMIT) of the University of Osaka Graduate School of Medicine was established in 2014 with the aim of promoting our pioneering research on medical science and medical care and creating medical innovation for social implementation. CoMIT plays a role as a platform to “bridge” researchers from rapidly developing fields of life science, digital health, AI, and data science cross-functionally and promote consistent development from basic research to clinical application and commercialization through industry-academia collaboration.

The University of Osaka Graduate School of Medicine constantly explores future-oriented medical care to realize a “future society for our lives.” CoMIT is especially committed to addressing the challenges in modern

medical science such as cancer, regenerative medicine, intractable immune disorders, and infectious diseases. Physicians and other healthcare professionals, medical researchers and technologists, and entrepreneurs aiming for social implementation work together across the boundaries of their expertise to develop innovative therapies and diagnostic technologies to meet these challenges. CoMIT also proactively promotes international collaboration to establish a research system that can contribute even to global medical issues.

Through various activities based in CoMIT, we will develop medical professionals to lead the next generation and achieve breakthrough results in medical research to provide new values to the society. We sincerely appreciate your continued warm support and cooperation.

## An integrated research center for collaboration among industry, academia, and government



Director  
Center of Medical Innovation  
and Translational Research

*FUJIMOTO Manabu*

In 2002, the Graduate School of Medicine of the University of Osaka established the Medical Center for Translational Research at the University of Osaka Hospital, and has become one of the first institutions in Japan to establish a system to develop basic technologies (from on and off campus) into advanced medical care. The next innovation expected was the preparation of the “soil” for promising basic technologies to flourish. As a key way to achieve this, the establishment of the Center of Medical Innovation and Translational Research (CoMIT) was proposed with the purpose of enhancing collaboration between industry and academia.

In the course of fleshing out the details, this proposal was selected for the Subsidy for Advanced Technology Demonstration and Evaluation Facility Development (a project for construction of “Centers to Facilitate the Development of Technology”) by the Ministry of

Economy, Trade and Industry. CoMIT was then established in April 2014 as the culmination of leadership by 3 successive deans of the Graduate School of Medicine and hard work by numerous faculty members.

CoMIT has a highly unique characteristics, where companies, universities, and researchers from different fields and areas gather “Under One Roof” of the same facility for development and practical application of integrative, cross-cutting, advanced medical technology in immunity, regeneration, and other areas. The number of projects promoted at CoMIT and participating companies is actually increasing every year, further enriching research to deliver multiple achievements. I hope CoMIT will continue to play an active role in bridging basic research to clinical research and social implementation as a center to create and deliver new innovations by integrating various areas of knowledge.

# Faculty of Medicine Floor [Education]



The first and second floors host state-of-the-art educational facilities for undergraduate and graduate students, and for residents.

The first floor includes (1) the Multimedia Hall, a 134 fixed-seat auditorium equipped with a personal computer and monitor at each seat. The room is suitable for graphical and interactive lectures and practice, language education, seminars, and other versatile educational activities. (2) The Student Laboratory 1 is a space for the practice of basic medicine with state-of-the-art measurement and analysis equipment, where all of the students of the same grade can practice at the same time.

The second floor is home to the Simulation Center and Clinical Training Room, which is also open to both residents and nurses of the University Hospital. On the same floor are located various facilities including the Student Laboratory 3, the Private Study Room, the Lecture Room for graduate students, and the Conference Room.

This floor also hosts rooms for administrative and faculty members of the Medical Education Center and Postgraduate Medical Training Center, which provide continuous pre- and postgraduate education.



**Professor**  
Medical Education Center  
Graduate School of Medicine

*WATABE Kenji*

The center building provides a combination of educational facilities with state-of-the-art equipment. This new facility will certainly make a dramatic improvement in the educational environment for undergraduate students, residents, and graduate students. It is our strong will to utilize the facility to achieve the goal of the Faculty of Medicine to develop human resources and thereby, "foster leaders equipped with a global perspective."

*Fostering Leaders with  
an International Perspectives*

# Faculty of Medicine Floor [Research] / WPI-PRIME



## WPI Premium Research Institute for Human Metaverse Medicine (WPI-PRIME)

### – Taking on an Unending Challenge:

### “Conquering All Diseases” through Metaverse-Based Medical Research –

WPI-PRIME was selected in 2022 as a research center of World Premier International Research Center Initiative (WPI) launched by the Ministry of Education, Culture, Sports, Science and Technology (MEXT). WPI-PRIME aims to create a new scientific field, "Human Metaverse Medicine," which enables us comprehensively and continuously to understand the process of disease development, and to develop personalized prevention methods and curative treatments for diseases.

WPI-PRIME enhances the integration of organoid biomedical science and information and mathematical science, and generates fused disciplines. Moreover, WPI-PRIME creates worldwide research networks by building an international research environment.

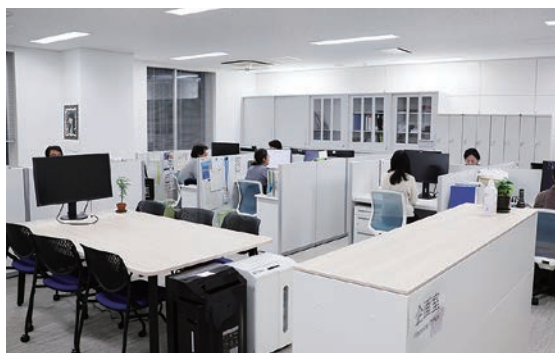
The third floor provides research spaces for Principal Investigators (PIs) inside and outside The University of Osaka. This floor also has a seminar room especially designed for active interaction among researchers as meeting spaces. Researchers from diverse fields can work at “under-one-roof” environment and engage in interdisciplinary exchange with PIs working nearby the CoMIT building.

The third floor is also home to the offices for administrative team and the Director of WPI-PRIME. By having all members and teams working on the same floor, it helps to facilitate workflow and team chemistry of WPI-PRIME.



**Center Director**  
WPI-PRIME

*NISHIDA Kohji*



Research Planning and Management Office



Seminar room “Indra’s Net Connect”

# Hospital Floor [Department of Medical Innovation]



**Department of Medical Innovation (DMI)** provides scientifically and managerially seamless support for diverse procedures of research and development processes to establish novel medical technologies and to create medical innovation aiming at improving global health. DMI consists of four institutions which cooperate efficiently through various stages from exploring basic research ideas to promoting social implementation globally.



**Director**

Department of Medical Innovation  
The University of Osaka Hospital

*MIYAGAWA Shigeru*

- **Medical Center for Translational Research (MTR)** promotes translational research from pre-clinical stages to early clinical development in academia. MTR supports exploration of excellent life science ideas, fosters promising seeds and translates them into established medical technologies ready for conveyance to industry.
- **Academic Clinical Research Center (ACR)** supports clinical trials and clinical studies with global-standard subject protection and a supporting system in accordance with the regulations. Development of cutting-edge medical technologies and new therapies are within its scope.
- **Data Coordinating Center (DCC)** provides support for clinical trials and clinical studies including the development of appropriate study protocols, collecting reliable data, and performing accurate statistical analysis in order to conduct evidence-based clinical trials and clinical studies guaranteed by quality assurance.
- **Center for Global Health (CGH)** supports the receiving of non-Japanese patients and medical trainees. CGH fosters healthcare professionals to become international leaders. It also disseminates Japanese innovative medical technologies to other countries.





*For the future of  
medical sciences*

# 5-9,B1<sub>F</sub> The Center of Medical Innovation and Translational Research

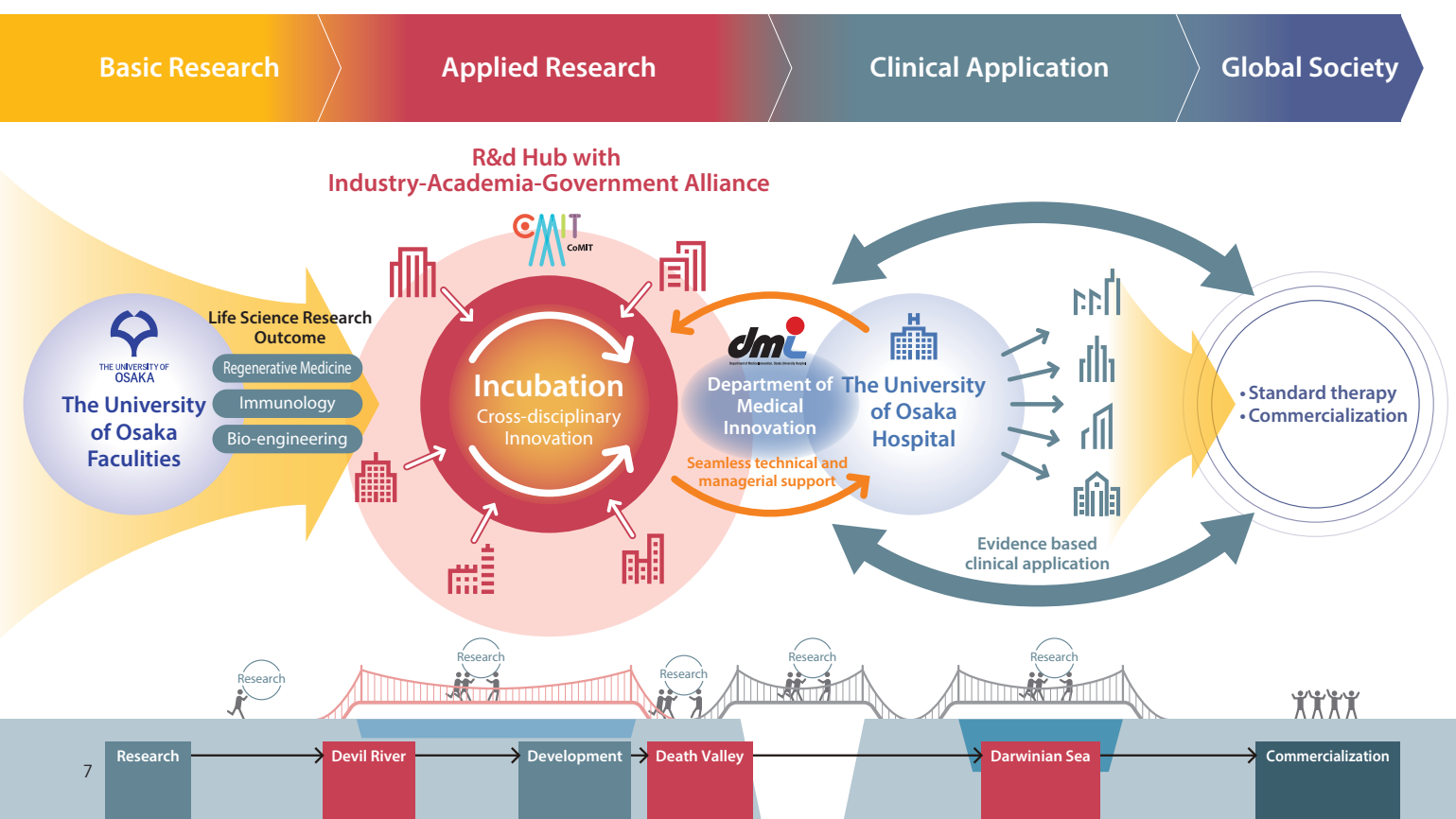
## Research and Development in an International Center for Innovative Medical Science

### Goals

- To serve as an R&D hub to seamlessly integrate promising new ideas of basic research into clinical research to the establishment of new standard in medical care
- To promote open innovation in order to develop next-generation drugs and innovative medical technologies

Conventional collaboration between industry and academia in Japan mainly consisted of university laboratories or individual researchers separately conducting joint research with companies. "Collaboration" actually meant connecting scattered dots.

CoMIT has brought collaboration to a new level by putting together company representatives, university personnel, and researchers in different fields to work in the same facility. By doing so, CoMIT seeks to provide an environment that fosters links among disparate laboratories and projects, and to integrate the results of wide-ranging research and technologies in a view to rapidly put those results to clinical and commercial use.



# Under One Roof

## Organization

CoMIT comprises three departments.

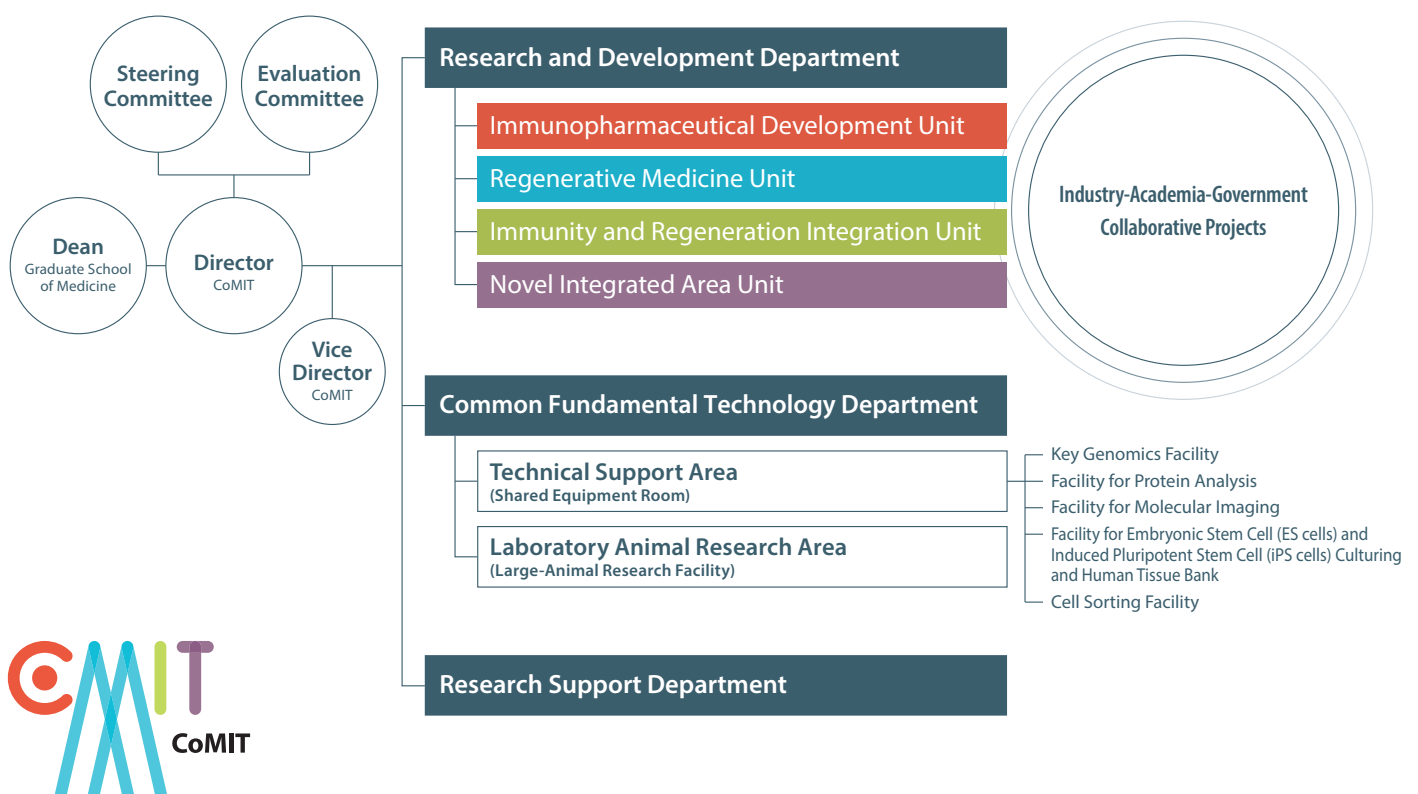
- **The Research and Development Department** implements numerous projects that involve collaboration among industry, academia, and government.
- **The Common Fundamental Technology Department** provides technological infrastructure and support for researchers.
- **The Research Support Department** is responsible for providing managerial support, monitoring and evaluation of the projects.

## Our primary research fields

- Immunology
- Regenerative medicine
- Integration of the above two fields
- Interdisciplinary research

The University of Osaka has produced numerous world-acclaimed research results in Immunology and Regenerative medicine. CoMIT mainly focuses on translational research of these outstanding research outcomes.

Our projects, however, are not limited to these two areas and a variety of distinctive interdisciplinary research projects are in progress.



# B1<sub>F</sub> Laboratory Animal Research Area [Large-Animal Research Facility]



*Delivering highly reliable  
technical support  
for non-clinical research*

## Animal facility for pre-clinical research

The Large-Animal Research Facility, a shared core of the CoMIT, supports translational research in regenerative medicine and biomedical engineering.

The unit offers surgical suites maintained to high cleanliness standards and onsite imaging analysis within a tightly controlled environment.

All large-animal studies are conducted in full accordance with the Infectious Diseases Control Act, the Act on Domestic Animal Infectious Diseases Control, the Cartagena Protocol-related legislation, and other pertinent regulations.

Stringent measures such as effluent sterilization, advanced air-handling systems, and escape-prevention infrastructure ensure regulatory compliance and the highest standards of biosafety.



**Manager**

Institute of Large Laboratory Animal Sciences, CoMIT

**Professor**

Institute of Experimental Animal Sciences, Faculty of Medicine

*NAKAO Kazuki*

The facility is maintained in a state of cleanliness and implements proper husbandry practices with meticulous attention to animal welfare.

# Facilities and Instrumentation at the Large-Animal Research Facility



## Surgical Suites (3 rooms)

Equipped for surgical procedures in a clean-grade environment

## Imaging Laboratory

Large-format instruments enable *in vivo* imaging and analysis

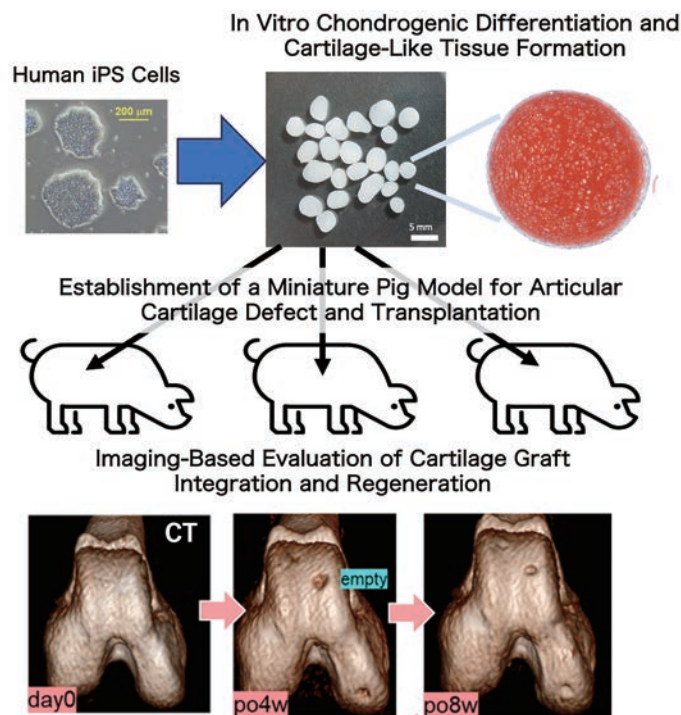


## Effluent Sterilization Tanks

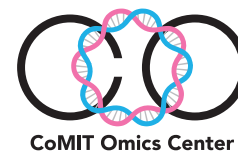
Two tanks, each capable of sterilizing up to 2 tonnes of wastewater

# Examples of Developed Technologies in Regenerative Medicine

## Regenerative Therapy for Articular Cartilage Injury Using iPS Cell-Derived Cartilage Grafts



# 5<sub>F</sub> Technical Support Area [Shared Equipment Room]



CoMIT's technical support area provides technical infrastructure and extensive support for researchers. We offer cutting-edge experimental equipment for all laboratories to share in their experiments.

Our technical experts are always ready to provide the maintenance of equipment and react at first notice in case of problem.

You don't have to worry about the condition of the equipment. Just come to our floor and focus on your experiment.

We also provide consultation service to help enhance the quality of your research by constantly offering highly-reliable analysis of your data.



**Manager**

CoMIT Omics Center

**Professor**

Department of Division of Global Pharmacology,  
Graduate School of Medicine

*HIBINO Hiroshi*



**Deputy Manager**

CoMIT Omics Center

**Associate Professor**

Department of Histopathology,  
Graduate School of Medicine

*NOJIMA Satoshi*

CoMIT Omics Center has a number of cutting-edge equipment and technology for genome and protein analysis. We provide powerful support for research from the standpoint of hardware and software.

# Five Facilities of the CoMIT Omics Center

## Key Genomics Facility

To create personalized gene therapies against inherited, chronic and intractable diseases

### Facilities

- Next-generation DNA sequencers with outstanding performance
- Sanger sequencers that accurately perform DNA sequencing
- In disease panel analysis, these sequencers can detect 0.5% of mutations.

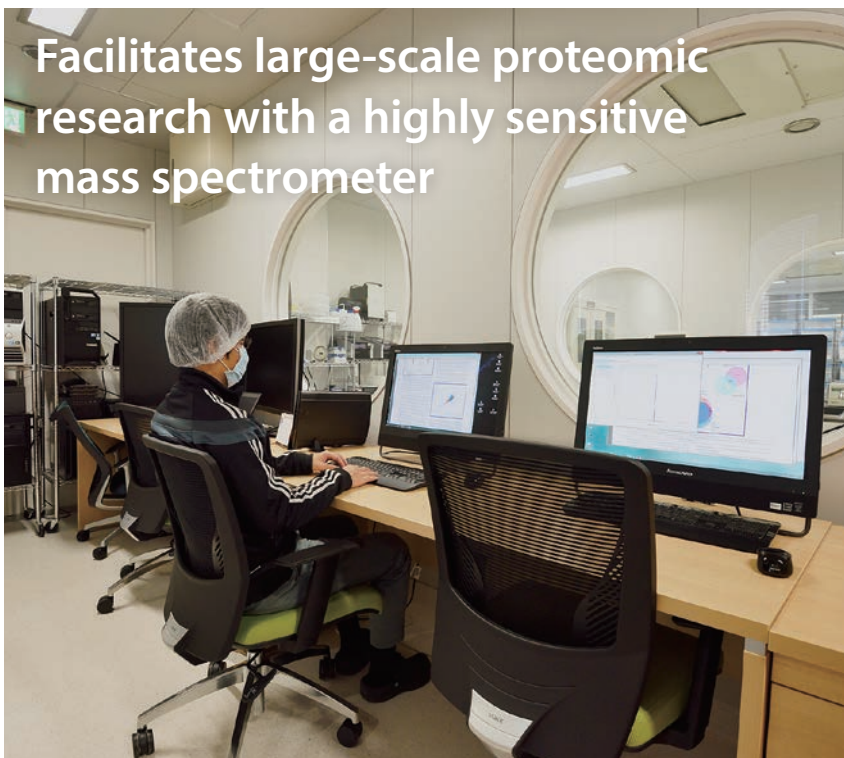


## Protein Analysis Facility

Facilitates large-scale proteomic research with a highly sensitive mass spectrometer

### Features

- Cutting-edge mass spectrometers
- Can detect minute quantities of proteins
- Works in coordination with the Graduate School of Medicine and other facilities
- Work in a class 10,000 clean room
- Can identify up to 10 trillionth of a gram of protein.



# 5<sub>F</sub> Technical Support Area

[Shared Equipment Room]

## Cell Sorting Facility



### Features

- Can distinguish and analyze up to 10 cells in a chamber.
- A target group of living cells can be separated at a rate of 8,700 cells/second

## Molecular Imaging Facility



### Features

- 3D imaging via light sheet microscopy
- Live cell imaging with little damage to cells

## Facility for ES cells and iPS cells Culture and Human Tissue Bank



### Features

- Overarching management of the samples needed for -omics research
- Cultures can be performed in special environments, such as culturing under hypoxic condition



*Center of Medical  
Innovation and  
Translational Research*

# Industry-Academia-Government Collaborative Projects



The core activities of the CoMIT consist of the academia-industry collaborative projects conducted in the Research and Development Department. These are not just company-funded projects but company representatives and researchers at the university are conducting actual research activities together to accelerate the industrialization of outstanding research results produced in The University of Osaka.



**28** Projects  
Collaborative R&D projects

**45** Companies  
Collaborating with

Immunopharmaceutical  
Development Unit

Regenerative Medicine Unit

Immunity and  
Regeneration Integration Unit

Novel Integrated Area Unit

Page	Unit	Project	Responsible Departments	Principal Investigator
9 <sub>F</sub>	25	Development of medical devices, biomechanical evaluation methods of activity, and development of new regenerative therapy for sports injuries, disorders and diseases	Department of Sports Medical Biomechanics	Specially Appointed Professor <b>TANAKA Hiroyuki</b> Department of Sports Medical Biomechanics
	22	Development of innovative therapies for intractable immune disease and cancer by targeting neuro, immune and metabolic regulatory factors	Department of Advanced Clinical and Translational Immunology	Specially Appointed Professor <b>NARAZAKI Masashi</b> Department of Advanced Clinical and Translational Immunology
	26	Development of Advanced Surgical Support Systems and Novel AI-Driven Image Generation Technologies	Department of Orthopaedic Biomaterial Science	Specially Appointed Associate Professor <b>OKA Kunihiko</b> Department of Orthopaedic Biomaterial Science
	34	Research Evaluation of Safety and Impact in Long COVID Intervention with Ensitrelvir for National Cohort Efficacy (RESILIENCE study)	Department of Post-infectious diseases Therapeutics	Professor <b>KUTSUNA Satoshi</b> Department of Infection Control and Prevention
	36	Establishment of Xenotransplantation Using Genetically Modified Pigs for End-Stage Organ Failure	Department of Xenotransplantation	Specially Appointed Professor <b>SAITO Shunsuke</b> Department of Xenotransplantation
	22	Development of cGMP manufacturing process for novel lipid-based nano-medicine by taking advantage of the in-line manufacturing platform technology	Department of DDS Pharmaceutical Development	Specially Appointed Professor <b>MATSUZAKI Takashi</b> Department of DDS Pharmaceutical Development
	34	Research and development of neural informatics, modulation and restoration	Department of Neurological Diagnosis and Restoration	Specially Appointed Professor <b>HIRATA Masayuki</b> Department of Neurological Diagnosis and Restoration
35	Building new clinical evidence by integrating clinical trial data and real world data (RWD)	Department of Biostatistics and Data Science	Specially Appointed Professor <b>HIDA Eisuke</b> Department of Biostatistics and Data Science	
8 <sub>F</sub>	20	Analysis of the functions of pathological or physiological periostin	Department of Advanced Molecular Therapy	Specially Appointed Professor <b>TANIYAMA Yoshiaki</b> Department of Advanced Molecular Therapy
	21	The development of immunotherapy targeting immune suppressive molecules and cells	Department of Frontier Research in Tumor Immunology	Specially Appointed Professor <b>OHKURA Naganari</b> Department of Frontier Research in Tumor Immunology
	21	Clinical research for regulatory factors in tumor immunology	Department of Clinical Research in Tumor Immunology	Specially Appointed Associate Professor <b>SAITO Takuro</b> Department of Clinical Research in Tumor Immunology
	29	Development of stem cell-based gene therapy adapted for the regeneration-inducing medicine	Department of Stem Cell Gene Therapy Science	Specially Appointed Associate Professor <b>KIKUCHI Yasushi</b> Department of Stem Cell Gene Therapy Science
	29	Development of novel medicine for inducing scarless and functional tissue regeneration by mobilizing bone marrow mesenchymal stem cells	Department of Stem Cell Therapy Science	Endowed Chair Associate Professor <b>SAGA Kotaro</b> Department of Stem Cell Therapy Science
	33	Research and development of precision diagnostics by highly sensitive spectroscopy (Life and Medical Photonics Division, Institute for Open and Transdisciplinary Research Initiatives (OTRI))	Department of Neurosurgery	Professor <b>KISHIMA Haruhiko</b> Department of Neurosurgery
	30	Establishing cancer profiling to develop innovative, personalized medicine and therapeutics	Department of Medical Data Science	Specially Appointed Professor <b>ISHII Hideshi</b> Department of Medical Data Science
7 <sub>F</sub>	24	Development of new technology for the manufacturing, standardization and application of stem cell-based products	Department of Stem Cells and Applied Medicine	Endowed Chair Associate Professor <b>SAKIMOTO Susumu</b> Department of Stem Cells and Applied Medicine
	33	Generation of 3D Vascular Organoids Using Human Vascular Endothelial Stem Cells and Functional Assessment of MSCs on Vascular Damage	Department of Ophthalmology	Professor <b>NISHIDA Kohji</b> Department of Ophthalmology
	24	Development of Innovative Medical Devices using Bionanotechnology and drug development for corneal regeneration medicine	Department of Advanced Device Regenerative Medicine	Professor <b>NISHIDA Kohji</b> Department of Ophthalmology
	28	Elucidation of the involvement of chronic inflammation during the pathogenic processes of various ophthalmic diseases and the creation of treatments	Department of Ocular Immunology and Regenerative Medicine	Professor <b>NISHIDA Kohji</b> Department of Ophthalmology
	19	Next-generation digital biomarker for early diagnosis of dementia	Department of Clinical Gene Therapy	Endowed Chair Professor <b>MORISHITA Ryuichi</b> Department of Clinical Gene Therapy
	25	Research and development of measurement platforms supporting diverse daily lifestyles	Department of Neuroinformatics	Professor <b>YANAGISAWA Takufumi</b> Department of Neuroinformatics
	20	Development of next-generation designer cell with improved adipose-derived stem cells (ADSCs)	Department of Gene & Stem Cell Regenerative Therapy	Endowed Chair Professor <b>SHIMAMURA Munehisa</b> Department of Gene & Stem Cell Regenerative Therapy
6 <sub>F</sub>	32	Next-Generation Devices and Therapies for Advanced Medicine	Department of Device Application for Molecular Therapeutics	Professor <b>HOSEN Naoki</b> Department of Hematology and Oncology
	28	New drugs for refractory neurological diseases through translational research	Department of Neuro-Medical Science	Professor <b>YAMASHITA Toshihide</b> Department of Molecular Neuroscience
	18	Development of novel diagnostic and therapeutic approaches for treating aging-associated diseases	Department of Clinical Gene Therapy	Endowed Chair Professor <b>MORISHITA Ryuichi</b> Department of Clinical Gene Therapy
	18	Therapeutic Vaccines as Next Generation Biologics	Department of Health Development and Medicine	Endowed Chair Professor <b>NAKAGAMI Hironori</b> Department of Health Development and Medicine
	19	Elucidation of pathological mechanisms in cutaneous immune-mediated disorders and validation of therapeutic targets	Department of Medicine for Cutaneous Immunological Diseases	Professor <b>FUJIMOTO Manabu</b> Department of Dermatology
	32	Development of Predictive Models and New Treatment Methods Using an Advanced Medical and Health Information Distribution Platform	Department of Division of Global Pharmacology	Professor <b>HIBINO Hiroshi</b> Department of Division of Global Pharmacology

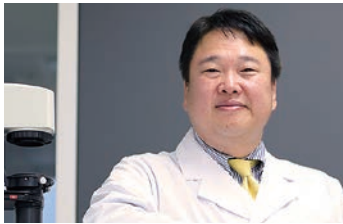
# Immunopharmaceutical Development Unit



*Novel-concept research  
for diseases associated  
with immune abnormalities.*

# Development of novel diagnostic and therapeutic approaches for treating aging-associated diseases

B-1 **6F** 0611



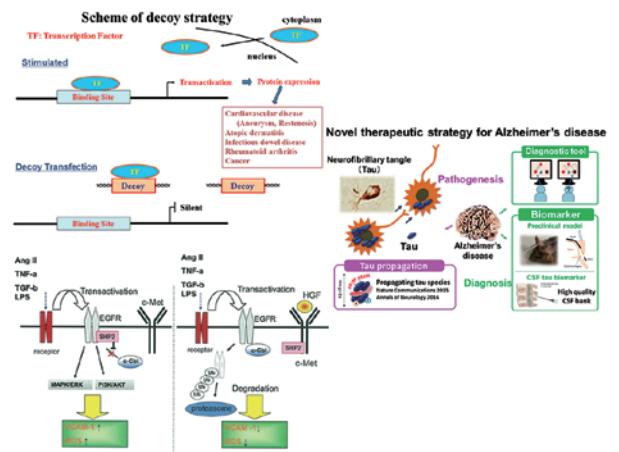
**MORISHITA Ryuichi**  
Endowed Chair Professor  
Department of Clinical Gene Therapy

Responsible Department
Department of Clinical Gene Therapy
Research Partner
FunPep Co., Ltd.

Chronic inflammation plays a critical role in the pathogenesis of many aging-related diseases, including vascular diseases, Alzheimer’s disease, and cancer. As life expectancy continues to increase, the proportion of individuals affected by these diseases is also rising. Therefore, there is an urgent need to develop new methods for early diagnosis and effective treatment, with the ultimate goal of extending healthy life expectancy.

We aim to elucidate, at the molecular level, the mechanisms and pathophysiology of persistent chronic inflammation in aging-related diseases. Based on these findings, we seek to establish innovative and highly original diagnostic and therapeutic approaches. In particular, our research focuses on dementia, ischemic cardio-cerebrovascular diseases, and cancer metastasis and recurrence. We are investigating disease mechanisms and exploring therapeutic targets from multiple perspectives, including inflammation, immune responses, vascular injury, and tissue repair.

Furthermore, we actively promote translational research to bridge basic research findings with clinical applications. Through these efforts, we aim to advance innovative medical technologies originating in Japan and contribute to global healthcare.



# Therapeutic Vaccines as Next Generation Biologics

B-14 **6F** 0612



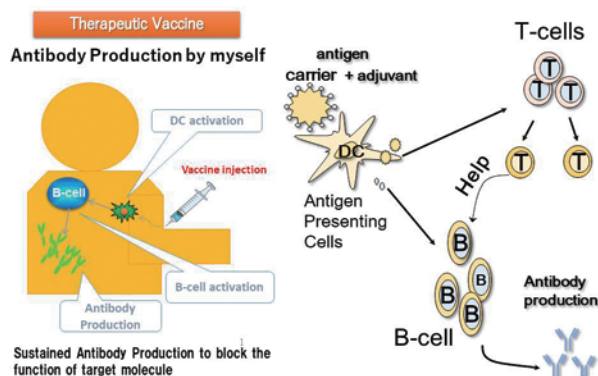
**NAKAGAMI Hironori**  
Endowed Chair Professor  
Department of Health development and Medicine

**HAYASHI Hiroki**  
Endowed Chair Associate Professor  
Department of Health development and Medicine

Responsible Department
Department of Health Development and Medicine
Research Partners
Daicel Corporation FunPep Co., Ltd.

The purpose of this project is to apply vaccine therapy as a next-generation biologics to the treatment of lifestyle-related diseases and intractable diseases, and to develop a basic technology and medical devices for safer and more efficient therapeutic vaccines. This basic technology can be applied to the treatment of various diseases and has the potential to spread not only to developed countries but also to developing countries. To develop therapeutic vaccines for clinical application targeting the treatment of infectious diseases, lifestyle-related diseases, and intractable diseases and novel vaccine to deplete aging cells, Daicel Corporation, and Funpep Corporation, together with the Department of Health Development and Medicine (Professor Nakagami), are collaborating in an industry-academic framework to develop a therapeutic vaccine, which will be originated in Japan. We will carry out translational research on therapeutic vaccines.

## Therapeutic Vaccine for Next Generation Biologics



## Elucidation of pathological mechanisms in cutaneous immune-mediated disorders and validation of therapeutic targets

A-30 6F 0613B



**FUJIMOTO Manabu**

Professor  
Department of Dermatology

**WATANABE Rei**

Guest Professor  
Department of Medicine for Cutaneous Immunological Diseases

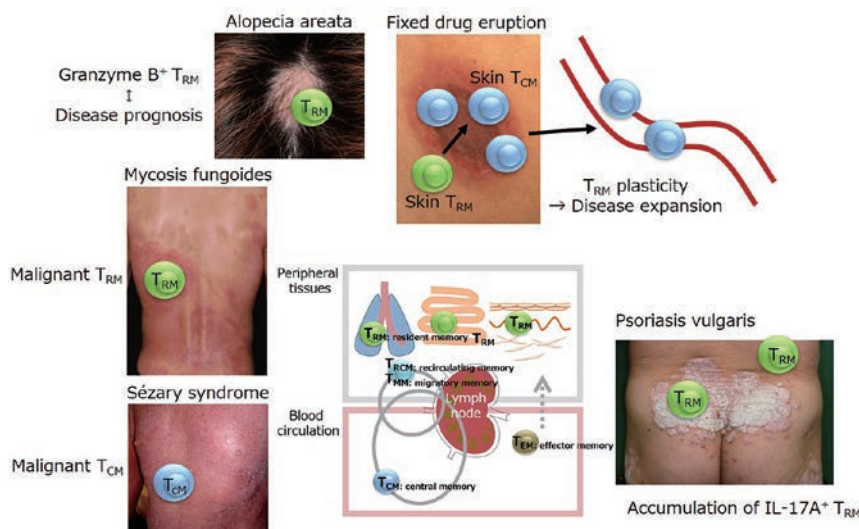
Responsible Department

Department of Medicine for Cutaneous Immunological Diseases

Research Partner

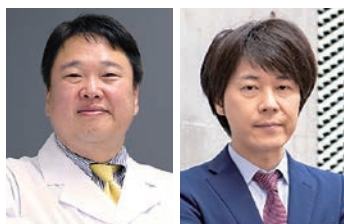
Maruho Co., Ltd.

We have demonstrated that immune cells localized in the skin are involved in the development, relapse and prognosis of skin diseases. In this collaborative research program, we aim to clarify the subtypes of skin immune cells, centering skin TRM, involved in cutaneous immune-mediated diseases, and to elucidate the key factors regulating the development and function of these cells. Our goal is to develop the therapeutic strategies targeting these factors.



## Next-generation digital biomarker for early diagnosis of dementia

B-16 7F 0709



**MORISHITA Ryuichi**

Endowed Chair Professor  
Department of Clinical Gene Therapy

**TAKEDA Shuko**

Endowed Chair Associate Professor  
Department of Clinical Gene Therapy

Responsible Department

Department of Clinical Gene Therapy

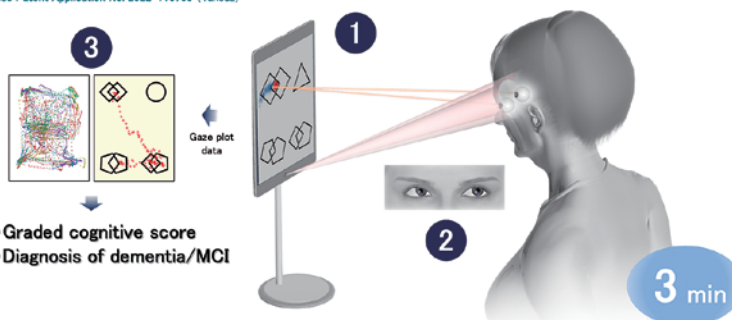
Research Partner

Ai-BrainScience Inc.

Rapid increase in dementia cases is becoming a serious social issue worldwide. Recent literature suggests that early diagnosis and interventions can prevent dementia progression or onset. This highlights the need for more efficient and convenient diagnostic tools to address the worldwide dementia epidemic. We developed a novel screening test for dementia using an eye-tracking technology (eye-tracking-based cognitive assessment, ETCA) and demonstrated its utility in clinical settings. We are going to further improve its performance and expand our project worldwide.

### Eye-Tracking-based Cognitive Assessment (ETCA)

Japanese Patent No. 6867715 (Takeda) (PCT/JP2018/041832)  
Japanese Patent Application No. 2020-059601 (Takeda) (POT/JP2021/005216)  
Japanese Patent Application No. 2022-116700 (Takeda)



- ① Present task movie for cognitive assessment
- ② Record gaze point using eye-tracking
- ③ Graded cognitive score based on gaze plot data



Oyama, Takeda et al. *Scientific Reports* 2019 (named one of the journal's top 100 neuroscience papers in 2019)

## Development of next-generation designer cell with improved adipose-derived stem cells (ADSCs)

B-15

7F 0713



**SHIMAMURA Munehisa**

Endowed Chair Professor

Department of Gene & Stem Cell  
Regenerative Therapy

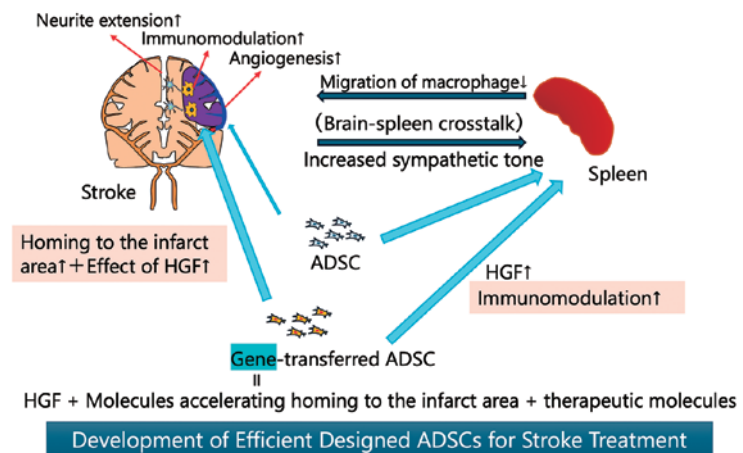
Responsible Department

Department of Gene & Stem Cell  
Regenerative Therapy

Research Partner

AS Medical Support Co., Ltd.

While suppressing inflammation and promoting neural regeneration are key to improving the prognosis of ischemic stroke, the effectiveness of existing treatments and mesenchymal stem cell transplantation is limited. Recent reports have revealed significant individual variation in the therapeutic efficacy and cytokine secretion capacity of ADSCs. We have determined that differences in the expression levels of HGF (hepatocyte growth factor), secreted by ADSCs, determine the therapeutic efficacy in models of ischemic stroke and autoimmune diseases. Based on these findings, we are currently advancing the development of high-performance engineered ADSCs through genetic modification designed to enhance HGF expression and improve their ability to migrate to the site of the lesion. We aim to establish next-generation regenerative medicine that overcomes individual variability and maximizes therapeutic potential, while also pursuing the discovery of novel therapeutic target molecules.



## Analysis of the functions of pathological or physiological periostin

A-28

8F 0801



**TANIYAMA Yoshiaki**

Specially Appointed Professor

Department of Advanced Molecular Therapy

Responsible Department

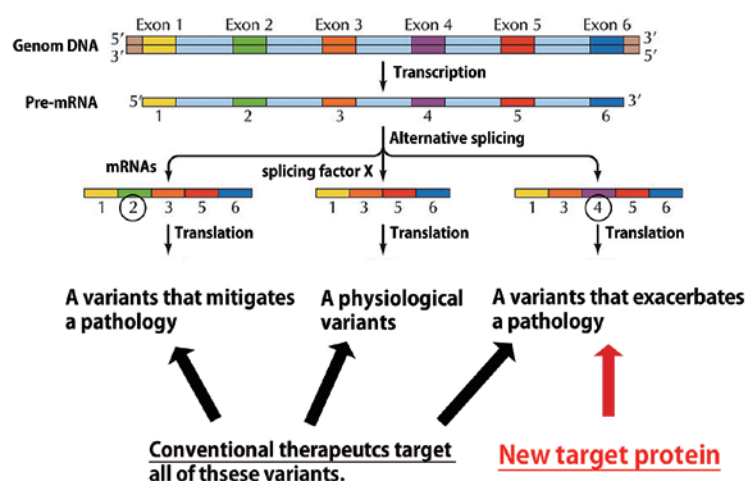
Department of  
Advanced Molecular Therapy

Research Partner

Periotherapia Co.,Ltd.

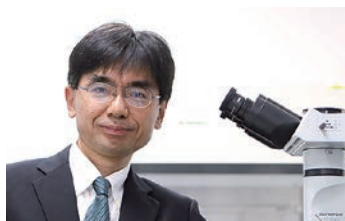
"Alternative splicing variant (ASV)," a mechanism in which multiple products are produced from a single gene by variant switch, not only enables the acquisition of complex morphology and cellular functions of multicellular organisms but is also deeply involved in the pathogenesis of several diseases.

The purpose of this research is to selectively inhibit only ASV that is involved in the pathogenesis of chronic diseases such as cancer, heart failure, arteriosclerosis, renal failure, and diabetic retinopathy without inhibiting physiological ASV. We think that a safe and efficient therapy can be provided by selective inhibition of ASV. In this course, we will analyze the molecular mechanisms of pathological and physiological periostin and its in vivo functions such as transport of periostin mutants via exosomes or not.



## The development of immunotherapy targeting immune suppressive molecules and cells

A-5 8F 0802



**OHKURA Naganari**

Specially Appointed Professor  
Department of Frontier Research in Tumor Immunology

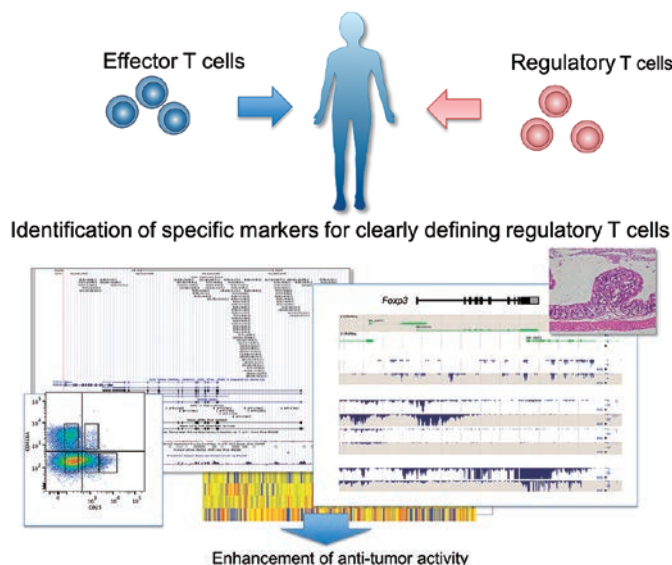
Responsible Department

Department of Frontier Research in Tumor Immunology

Research Partner

Shionogi & Co., Ltd.

Immunotherapy for cancers is expected to become an additional choice for cancer treatment. The therapy, however, does not necessarily provide successful results because of its anti-tumor effect prevention by immune suppressive cells, including regulatory T cells. Therefore, we first have to examine the molecular mechanisms by which cancer cells escape from immune surveillance, and identify molecules that clearly distinguish regulatory T cells from effector T cells. These molecules would be expected to be applicable for regulatory T cell-depletion in cancer patients, leading to the enhancement of anti-tumor activity.



## Clinical research for regulatory factors in tumor immunology

A-4 8F 0803, 0804



**SAITO Takuro**

Specially Appointed Associate Professor  
Department of Clinical Research in Tumor Immunology

Responsible Department

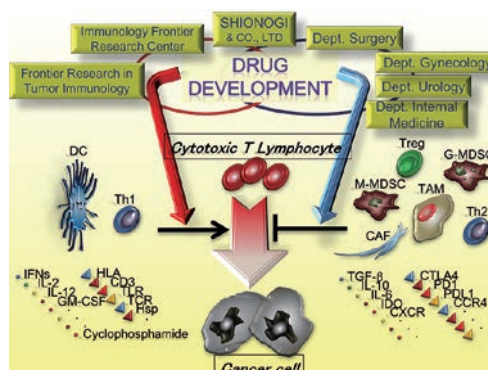
Department of Clinical Research in Tumor Immunology

Research Partner

Shionogi & Co., Ltd.

Emerging interest in new cancer immunotherapy through the regulation of immunosuppressive mechanisms has attracted worldwide attention because of the remarkable clinical effects of immune checkpoint inhibitors. With the full support of Professor Sakaguchi (IFReC), who discovered regulatory T cells (Tregs), our laboratory explores mechanisms to regulate various immunosuppressive cells, especially Tregs, to chase up new drug seeds for clinical application of cancer immunotherapy in collaboration with Shionogi & Co., Ltd.

To conduct clinically oriented research, especially detailed analysis in tumor micro-environment, we have established close cooperation with the departments of gastroenterological surgery, gynecology, urology, dermatology, breast surgery, head and neck surgery, respiratory surgery, and respiratory medicine. Through this broad collaboration, we have newly identified and patented “CCR8”, uniquely expressed on tumor-infiltrating Tregs. Furthermore, we have produced an antibody drug targeting CCR8, and a clinical trial has been initiated in 2022.



## Development of innovative therapies for intractable immune disease and cancer by targeting neuro, immune and metabolic regulatory factors

A-20 9F 0903



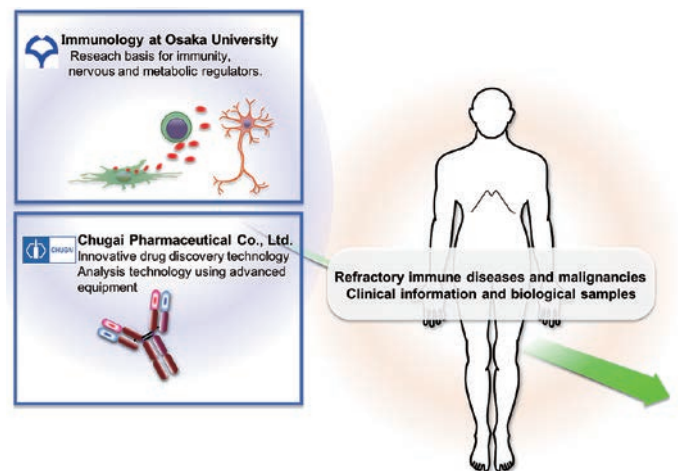
**NARAZAKI Masashi**

Specially Appointed Professor  
Department of Advanced Clinical and Translational Immunology

- Responsible Department  
Department of Advanced Clinical and Translational Immunology
- Research Partner  
Chugai Pharmaceutical Co., Ltd.

Immunology research has brought many new discoveries and findings as a driving force in medicine and life sciences. The achievements have been applied to the development of biologics for rheumatoid arthritis and allergic diseases, as well as to cancer immunotherapy with anti-immune checkpoint antibodies, and have a great impact on clinical practice today. However, there are still many intractable immune diseases and cancers for which there is no cure, and clinical applications based on research progress and new findings are required.

With these backgrounds, the project promotes integrated analysis and verify human-derived samples using advanced immunological techniques based on the research achievements of immunology at The University of Osaka. From the results obtained, we aim to develop new therapeutic methods by cooperation with Chugai Pharmaceutical Co., Ltd. drug discovery technology.



## Development of cGMP manufacturing process for novel lipid-based nano-medicine by taking advantage of the in-line manufacturing platform technology

A-22 9F 0912A, 0914B

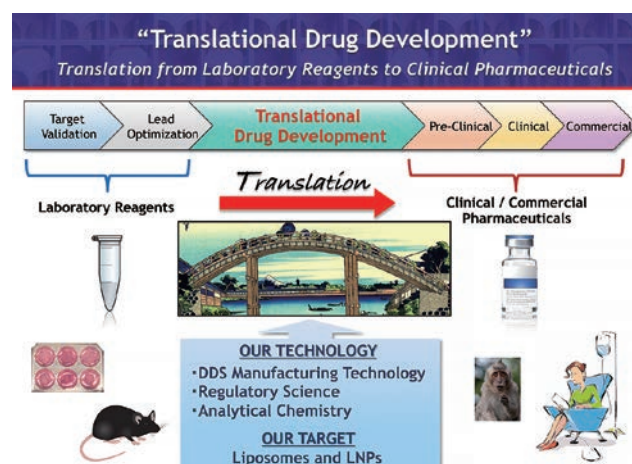


**MATSUZAKI Takashi**

Specially Appointed Professor  
Department of DDS Pharmaceutical Development

- Responsible Department  
Department of DDS Pharmaceutical Development
- Research Partners  
Shionogi Pharma Co., Ltd.

The aim of our department is the development of current good manufacturing practice (cGMP) manufacturing processes for novel lipid-based nano-formulations, including liposomes and lipid nano-particles (LNPs), targeting immunocompetent cells for the treatment of cancer and transplant rejection. Our innovative and patented in-line manufacturing technologies, SOLID and SQUID, have proven to be promising for cGMP production of liposomal investigational new drugs. Our technologies will accelerate the “Translational drug development” in which laboratory reagents are re-developed to clinical and commercial pharmaceuticals, and therefore lead to prompt approval of new drugs.



# Regenerative Medicine Unit



*For the establishment of  
regenerative therapies as  
new standard in medical care.*

## Development of new technology for the manufacturing, standardization and application of stem cell-based products

B-12

7F 0701



**SAKIMOTO Susumu**

Endowed Chair Associate Professor

Department of  
Stem Cells and Applied Medicine

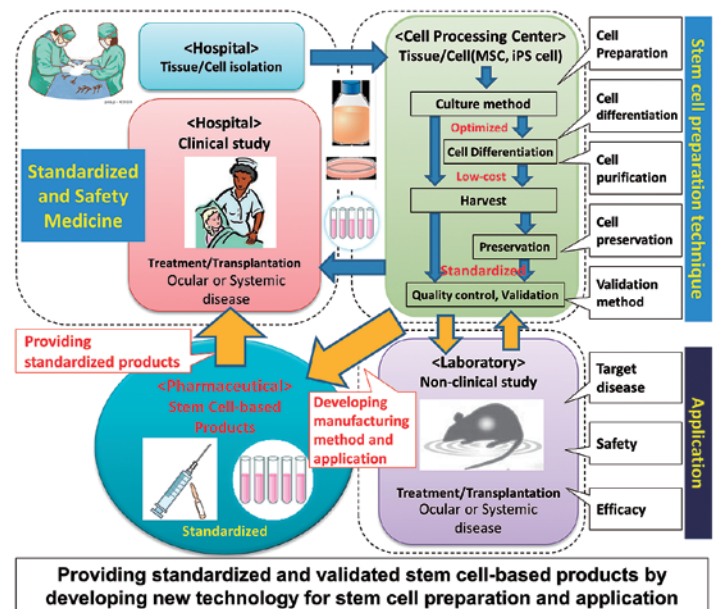
Responsible Department

Department of  
Stem Cells and Applied Medicine

Research Partner

ROHTO Pharmaceutical Co., Ltd.

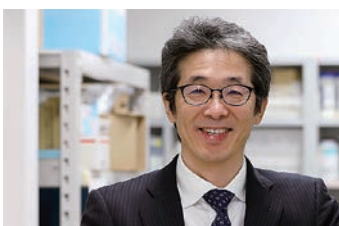
Regenerative medicine based on stem-cell technology can possibly treat irreversibly dysfunctional tissues or organs that medicine cannot treat currently. However, the realization of regenerative medicine has faced some significant obstacles, such as cell preparation methods, product standardization, and the costs of manufacturing. The aim of our department is to develop new technologies to manufacture and standardize stem-cell-based products for the advancement of regenerative medicine.



## Development of Innovative Medical Devices using Bionanotechnology and drug development for corneal regeneration medicine

A-34

7F 0703



**NISHIDA Kohji**

Professor

Department of Ophthalmology

Responsible Department

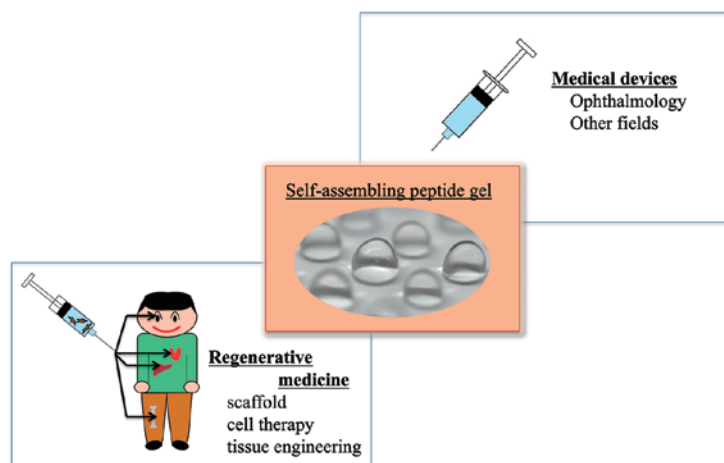
Department of Advanced Device  
Regenerative Medicine

Research Partner

Menicon Co. Ltd.

We are aiming to develop innovative medical devices by using a new self-assembling peptide gel developed with nanotechnology. The self-assembling peptide gel has high transparency under neutral condition and acts as a scaffold.

The development of medical devices with the self-assembling peptide gel is mainly focused on ophthalmology field where transparency is important. Specifically, we will develop auxiliary materials for surgeries and tissue regeneration. We also aim to develop new drugs for corneal regenerative medicine.



### Potential uses of the self-assembling peptide gel

## Research and development of measurement platforms supporting diverse daily lifestyles

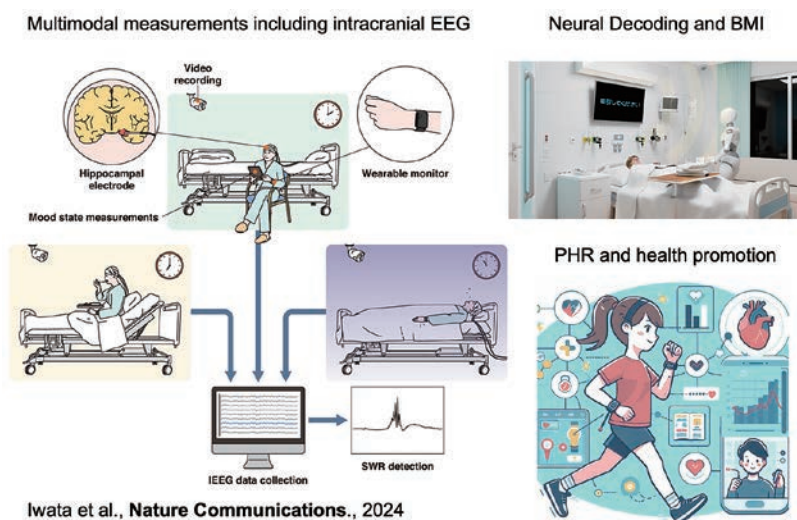
C-10 7F 0711, 0712, 0809



**YANAGISAWA Takufumi**  
Professor  
Department of Neuroinformatics

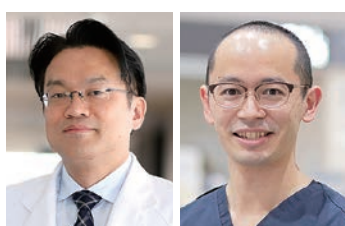
- Responsible Department  
Department of Neuroinformatics
- Research Partner  
Daicel Corporation  
Shionogi & Co., Ltd.  
Hankyu Hanshin Holdings, Inc.

In this project, we develop a multimodal measurement platform that integrates EEG-centered biological signals with physiological data such as heart rate and electrodermal activity. Through continuous and synchronized monitoring in daily life environments, the system enables the visualization of emotional and sleep states, with applications in personal health management, mental health assessment, and sleep improvement. Furthermore, we aim to enhance high-precision EEG measurement and synchronization and analysis techniques with other physiological signals, and to contribute to the creation of a new healthcare platform rooted in everyday life through integration with Personal Health Records (PHR).



## Development of medical devices, biomechanical evaluation methods of activity, and development of new regenerative therapy for sports injuries, disorders and diseases

A-18 9F 0901B, 0902



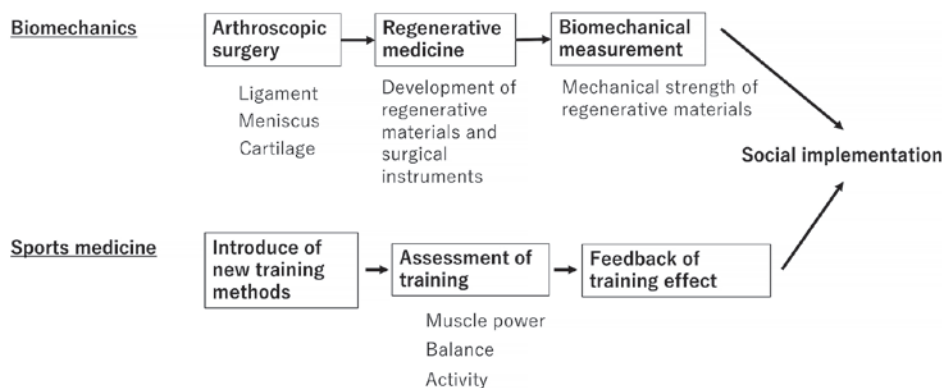
**TANAKA Hiroyuki**  
Specially Appointed Professor  
Department of Sports Medical Biomechanics

**TSUJII Akira**  
Specially Appointed Associate Professor (Lecturer)  
Department of Sports Medical Biomechanics

- Responsible Department  
Department of Sports Medical Biomechanics
- Research Partners  
Stryker Japan K.K.  
Akiyama Medical Co.,Ltd.  
Interstem Co., Ltd.  
ASAHI KASEI THERAPEUTICS CORPORATION

Sports injury, disorders and diseases are observed in musculoskeletal system of the whole bodies. Treatments for these are essential not only for improving daily activities, but also for returning to sports and improving of sports performance.

Based on our previous research products, we will develop and put into practical use new medical devices, develop regenerative medicine using cells in basic research, we also conduct research on biomechanical activity evaluation methods for exercise therapy and research related to the diagnosis and prevention of disorders and diseases ranging from sports-related injuries to osteoarthritis and osteoporosis, and to link this to social implementation.



## Development of Advanced Surgical Support Systems and Novel AI-Driven Image Generation Technologies

A-35

9F 0904



**OKA Kunihiro**

Specially Appointed Associate Professor

Department of Orthopaedic Biomaterial Science

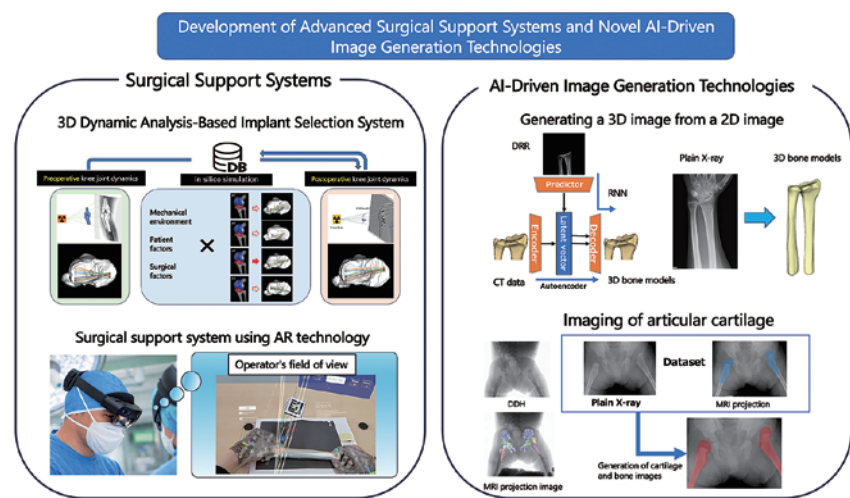
Responsible Department

Department of Orthopaedic Biomaterial Science

Research Partner

Stryker Japan K.K.  
Nippon Zoki Pharmaceutical Co., Ltd.  
NAKASHIMA HEALTHFORCE CO.,LTD.  
Medacta International  
Kyowakai Medical Corporation

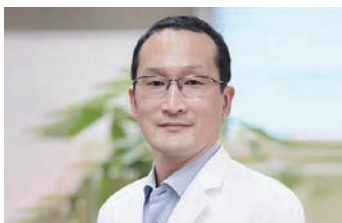
While joint replacement and osteotomy are widely performed to treat limb joint dysfunction such as osteoarthritis, achieving optimal postoperative outcomes requires implant selection tailored to individual joint kinematics and precise surgical navigation. Our laboratory is developing advanced surgical support systems that utilize 3D dynamic imaging analysis and computer-based surgical simulation to restore normal joint morphology and function. In parallel, leveraging our extensive imaging database of various musculoskeletal disorders, we are developing AI-driven technologies to visualize articular cartilage not detectable on standard radiographs and to automatically reconstruct three-dimensional models from two-dimensional imaging data.



## Establishment of Xenotransplantation Using Genetically Modified Pigs for End-Stage Organ Failure

A-36

9F 0911B



**SAITO Shunsuke**

Specially Appointed Professor

Department of Xenotransplantation

Responsible Department

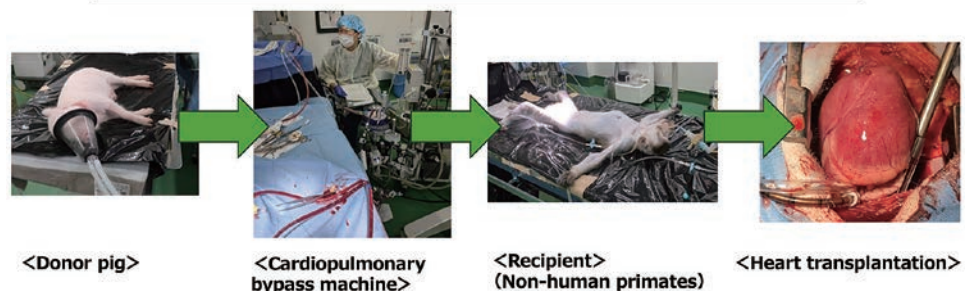
Department of Xenotransplantation

Research Partner

General Incorporated Association Tokushukai

In severe organ failure, organ transplantation is the final treatment option, but a critical shortage of donors remains a major challenge. This research aims to establish a novel transplant therapy using hearts and other organs from genetically modified domestic pigs. Starting with the heart and kidney, the project seeks to shorten transplant waiting times, save many lives, and lead the world with a medical technology originating in Japan.

### Establishment of Organ Transplantation Therapy Using Porcine Organs



# Immunity and Regeneration Integration Unit

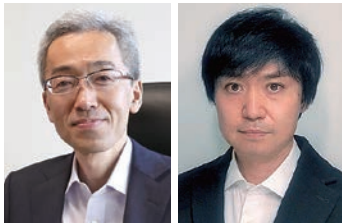


*Attempts to develop  
novel concept therapies through  
the integration of immunology  
and regenerative medicine.*

## New drugs for refractory neurological diseases through translational research

A-21

6F 0604, 0912B



**YAMASHITA Toshihide**

Professor  
Department of Molecular Neuroscience

**ITOKAZU Takahide**

Specially Appointed Professor  
Department of Neuro-Medical Science

Responsible Department

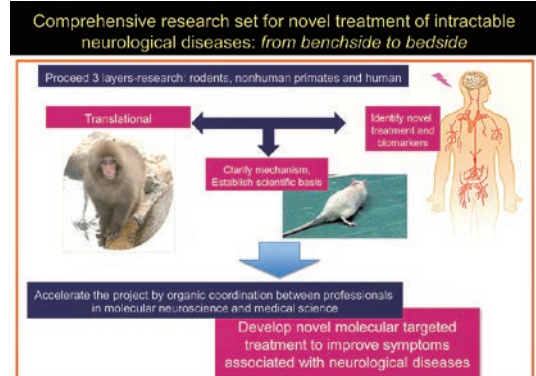
Department of Neuro-Medical Science

Research Partner

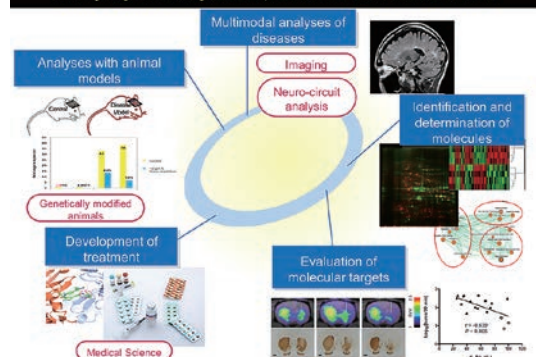
Tanabe Pharma Corporation

- Search for biomarkers of the state of refractory neurological diseases and effect of drug treatment
- Basic research on drug development for refractory neurological diseases
- Search for new drug targets in refractory neurological diseases

Frustratingly, little is known about the causes of many neurological diseases and little is available in terms of treatment. In this course, we examine the pathology of several neurological diseases, the use of animal models to study the disease, and consider potential drug targets and biomarkers. Studies involve basic and clinical research.



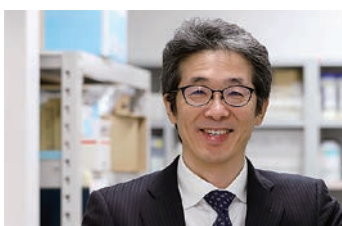
Cutting-edge technologies at Department of Neuro-Medical Science



## Elucidation of the involvement of chronic inflammation during the pathogenic processes of various ophthalmic diseases and the creation of treatments

A-6

7F 0704



**NISHIDA Kohji**

Professor  
Department of Ophthalmology

Responsible Department

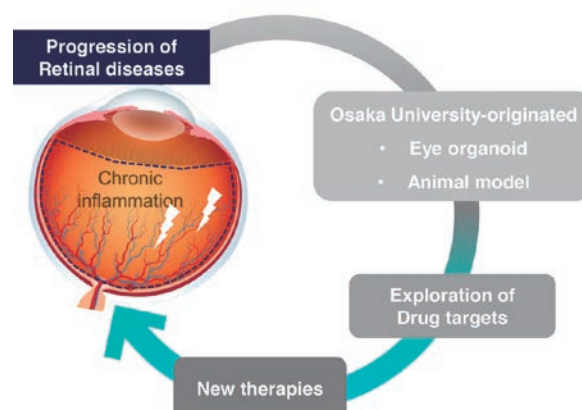
Department of Ocular Immunology and Regenerative Medicine

Research Partner

Otsuka Pharmaceutical Co., Ltd.

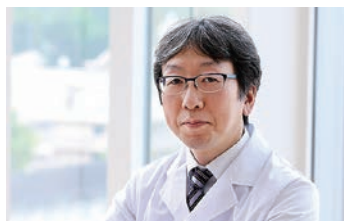
In Japan, retinitis pigmentosa, diabetic retinopathy, and age-related macular degeneration, all of which affect the retina, account for more than 30% of the cause of visual impairment. While chronic inflammation deteriorates pathological condition in these retinal diseases, the molecular mechanisms regulating disease progression have not been fully elucidated. Our goal of the project is to develop novel therapies for resolving chronic inflammation. We attempt drug discovery approach under physiological conditions close to human organs using the animal model and organoid of specific eye diseases based on the research achievements of Ophthalmology at The University of Osaka.

Drug discovery approach under physiological conditions



## Development of stem cell-based gene therapy adapted for the regeneration-inducing medicine

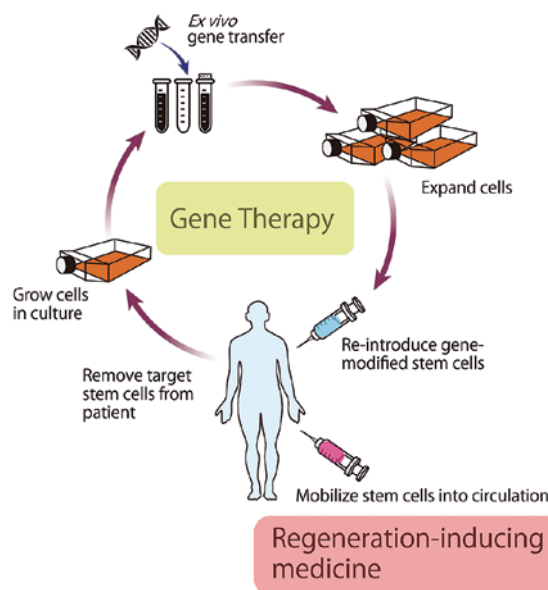
A-19 8F 0811



**KIKUCHI Yasushi**  
Specially Appointed Associate Professor  
Department of Stem Cell Gene Therapy Science

Responsible Department
Department of Stem Cell Gene Therapy Science
Research Partner
StemRIM Inc.

The goal of our project is to develop a gene therapy targeting stem cells as a curative treatment for inherited diseases based on the collaborative research of “regeneration-inducing medicine” with StemRIM. We aim to provide non-invasive and effective gene therapy through the ex vivo approach, in which stem cells are genetically modified outside the body and then transplanted back again to the patients who have been suffering from intractable inherited diseases, such as epidermolysis bullosa, hemophilia, metabolic disorders, etc.



## Development of novel medicine for inducing scarless and functional tissue regeneration by mobilizing bone marrow mesenchymal stem cells

B-6 8F 0812



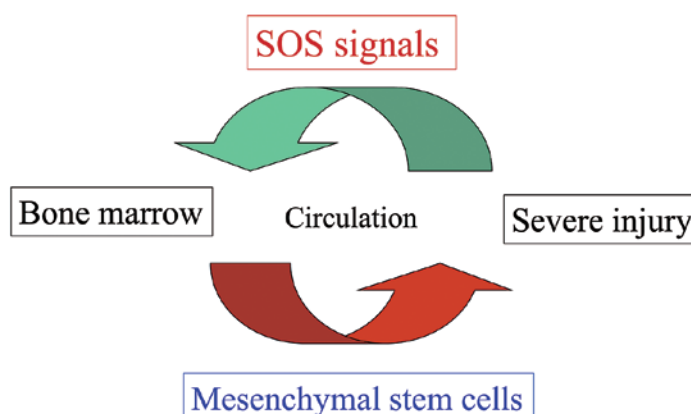
**SAGA Kotaro**  
Endowed Chair Associate Professor  
Department of Stem Cell Therapy Science

**TAMAI Katsuto**  
Guest Professor

Responsible Department
Department of Stem Cell Therapy Science
Research Partner
StemRIM Inc.

We found that some of necrotic tissue-derived factors induce mobilization of bone marrow mesenchymal stem/progenitor cells (MSCs) into the circulation if their concentration in the serum is highly elevated. This action results in the enhancement of tissue regeneration by increasing amount of circulating MSCs to the injured tissue. Goal of our project is to disclose the underlying molecular circuit of the injury-induced, MSC-mediated tissue regeneration mechanism in vivo. These findings will be applied to develop a novel medication to induce tissue regeneration by increasing MSCs' circulation from the bone marrow to the tissues with intractable injury.

### Crosstalk between injured tissues and bone marrow





# Novel Integrated Area Unit



*Integration of insights  
from diverse research fields.*

## Next-Generation Devices and Therapies for Advanced Medicine

A-9

6F 0603



**HOSEN Naoki**

Professor  
Department of Hematology and Oncology

**UCHIMURA Seiichi**

Specially Appointed Associate Professor  
Department of Device Application for Molecular Therapeutics

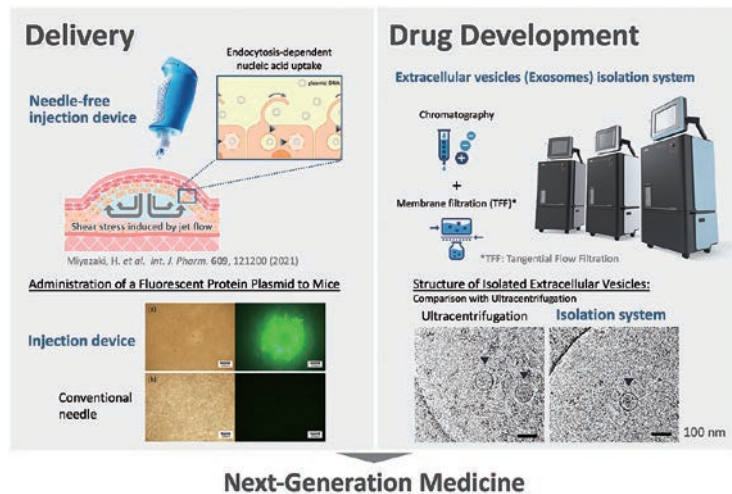
Responsible Department

Department of Device Application for Molecular Therapeutics

Research Partner

Daicel Corporation

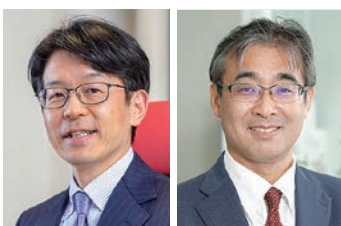
We are developing innovative delivery devices that enable minimally invasive, high-efficiency introduction of drugs and genes directly into cells by precisely controlling instantaneous driving forces with our proprietary technology. We are also building development and manufacturing technologies for emerging next-generation pharmaceutical modalities—such as extracellular vesicles including exosomes, viral products, and cell-based therapeutics—and integrating them with delivery devices to create new medical approaches. Through these R&D efforts, we aim to deliver advanced therapeutic technologies and devices that address diverse medical needs and advance the frontiers of medicine.



## Development of Predictive Models and New Treatment Methods Using an Advanced Medical and Health Information Distribution Platform

C-11

6F 0614B



**HIBINO Hiroshi**

Professor  
Department of Division of Global Pharmacology

**YAMADA Kenji**

Specially Appointed Professor  
Joint Research Laboratory for Decentralized Data Sharing

Responsible Department

Department of Division of Global Pharmacology

Research Partner

AIBTRUST Co., Ltd.

By leveraging Web3 technology, we aim to build a platform that enables patients to manage and utilize their own medical and health information, with the goal of realizing personalized medicine securely and transparently. We will integrate patients' lifestyle logs and medical data and perform AI analysis to develop highly accurate disease prediction models. Furthermore, through federated learning, we will facilitate data sharing while safeguarding privacy, enabling the early detection of disease risks and preventive interventions. Our objective is to contribute to improving patients' quality of life, reducing healthcare costs, and extending healthy life expectancy.

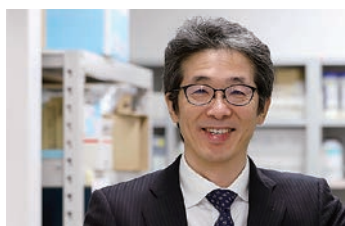


Securing and Utilizing Your Own Health Data! /  
Developing an NFT-based "Self-Sovereign" Data Distribution Platform

Medical and healthcare proofs of concept clarify the feasibility and improvement guidelines for social rollouts.

## Generation of 3D Vascular Organoids Using Human Vascular Endothelial Stem Cells and Functional Assessment of MSCs on Vascular Damage

C-12 7F 0702



**NISHIDA Kohji**

Professor

Department of Ophthalmology

Responsible Department

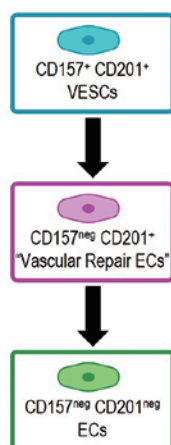
Department of Ophthalmology

Research Partner

ROHTO Pharmaceutical Co., Ltd.

Diabetic retinopathy (DR), a leading cause of blindness, faces limitations with current treatments and a lack of effective disease models. In this study, we will establish unique vascular endothelial stem cells derived from human ES/iPS cells to construct 3D vascular organoids. By applying stressors such as high glucose and hypoxia, we will develop an innovative model that faithfully replicates the pathology of DR.

Furthermore, we will use this model to evaluate the vascular protective and restorative effects of mesenchymal stem cell (MSC)-derived exosomes, followed by in vivo validation through transplantation into mice. Ultimately, this research will bridge the gap to the preclinical stage for a novel DR therapy utilizing MSC exosomes that targets vascular stabilization.



### Establishment of ES/iPS Cell-Derived CD157+CD201+ Vascular Endothelial Stem Cells (VESCs)

We have elucidated the hierarchy of vascular endothelial cells based on the stem cell markers CD157 and CD201 (Sakimoto et al., *Nature Communications* 2026). In this study, we will establish unique vascular endothelial stem cells from human ES/iPS cells and construct 3D vascular organoids. By subjecting these organoids to stressors such as hyperglycemia and hypoxia, we will develop an innovative model that faithfully replicates the pathology of DR.

## Research and development of precision diagnostics by highly sensitive spectroscopy (Life and Medical Photonics Division, Institute for Open and Transdisciplinary Research Initiatives (OTRI))

C-9 8F 0813B



**KISHIMA Haruhiko**

Professor

Department of Neurosurgery

**FUJITA Katsumasa**

Professor

Graduate School of Engineering

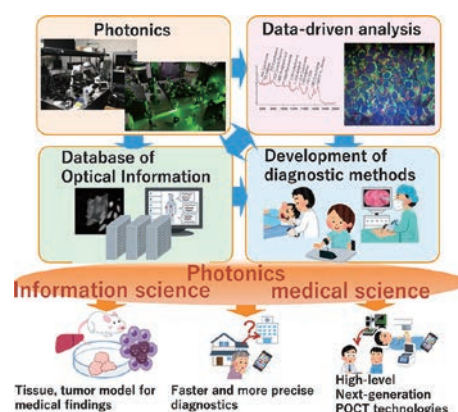
Responsible Department

Department of Neurosurgery

Research Partner

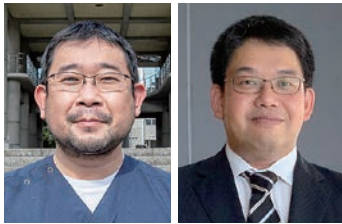
Systemex Corporation

Based on highly sensitive and precision spectroscopic measurement technology, we aim to develop new diagnostic and testing technologies for maintaining people's health, providing gentler medical care and a drug discovery environment. Photonics measurement technology enables non-invasive and multiple informative measurement. For example, non-invasive analysis for iPS-derived cells and organoids is possible, and it is expected to support stable production and quality evaluation of them, and contributes to drug discovery and regenerative medicine. In addition, we can expect to contribute to medical care and health by evolving highly sensitive measurement at the molecular level and integration technology of analytical functions into microfluidic chips, and developing highly sensitive and low-cost nucleic acid testing device. In order to utilize these technologies as precise and easy diagnostic methods in the medical field, we will promote field-integrated research through an industry-government-academia collaboration system. School of Medicine and hospital in The University of Osaka will play a central role in collaborating with companies and Life and Medical Photonics Division in OTRI.



# Research Evaluation of Safety and Impact in Long COVID Intervention with Ensitrelvir for National Cohort Efficacy (RESILIENCE study)

A-32 9F 0911A



**KUTSUNA Satoshi**  
Professor  
Department of Infection Control and Prevention

**ONOUZUKA Daisuke**  
Specially Appointed Associate Professor  
Department of Post-infectious diseases Therapeutics

**Responsible Department**  
Department of Post-infectious diseases Therapeutics

**Research Partner**  
Shionogi & Co., Ltd.

Some patients who have recovered from the acute phase of COVID-19 infection are experiencing various post-infection symptoms called Long COVID, such as respiratory and cardiovascular symptoms, taste and smell disorders, and neurological impairments, leading to a decreased quality of life (QOL) and impact on social life. The pathophysiology of these conditions is largely unknown, and there are no confirmed treatments or prevention methods. Shionogi Pharmaceutical is developing Ensitrelvir fumarate, a new oral antiviral drug that inhibits the 3C-like protease essential for the replication of SARS-CoV-2. This drug has the potential to address these social issues. Universities, with their specialized knowledge and medical infrastructure, are collaborating with industry to rapidly advance research aimed at elucidating the pathophysiology of Long COVID and establishing treatment and prevention methods.

**Goal**

- To investigate the effect of Ensitrelvir administration on the risk of Long COVID.
- To evaluate the superiority of Ensitrelvir administration on Long COVID in mild COVID-19 patients compared to placebo group.
- Evaluating the safety of Ensitrelvir administration.

(JRCTs051230184)

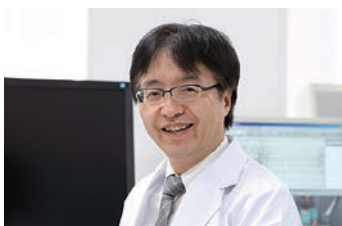
**[Research Design]**  
Single-center, double-blind, randomized placebo-controlled trial

**[Patients]**  
A total of 2,000 COVID-19 patients with mild symptoms

**[Methods]**  
Decentralized Clinical Trial : DCT

# Research and development of neural informatics, modulation and restoration

A-16 9F 0913



**HIRATA Masayuki**  
Specially Appointed Professor  
Department of Neurological Diagnosis and Restoration

**Responsible Department**  
Department of Neurological Diagnosis and Restoration

**Research Partners**  
JiMED Inc.  
Murata Manufacturing Co., LTD  
Pixie Dust Technologies, Inc.  
Shionogi & Co., Ltd.

The aim of this project is to develop neural informatics, modulation and restoration. Main missions of this project are as follows,

- 1) Research and development of wireless implantable brain-machine interfaces and related technologies
- 2) Collaborative exploratory research on non-pharmacological therapies for neurological disorders using sensory stimulation
- 3) Research and development of technologies for brain function measurement, reconstruction, and modulation related to 1) and 2)

## Implantable brain machine interfaces

**Social application by collaboration with companies**

**Collaboration with medical and electronic companies** Foundation of a start-up company

**Leave no one behind**

**Relieve disabled people from social pain**

- pain from disability
- pain for live
- pain for care giving burden

⇒ Resocialization

## Building new clinical evidence by integrating clinical trial data and real world data (RWD)

A-24

9F 0914A



### HIDA Eisuke

Specially Appointed Professor

Department of  
Biostatistics and Data Science

Responsible Department

Department of  
Biostatistics and Data Science

Research Partner

SHIONOGI & Co., Ltd.

RWD such as data from electronic medical record, national receipt database or patient registry are really valuable information source which can indicate actual health care environment and that is receiving a lot of attention recently because, we are expecting that effective use of RWD can optimize clinical development strategies, build clinical evidence and highly effective pharmacovigilance system and finally, take a part of enhancing clinical evaluation efficiency.

However, we also recognize there are a lot of challenges in terms of appropriate use of RWD and interpretation of research results obtained from RWD and especially, in the regulatory environment, we definitely need to overcome a lot of difficulties such as data quality and data collection methodologies of RWD.

Our department mission is to contribute to health care improvement and the realization of healthy society with overcoming following diverse difficulties in relation to effective use of RWD in collaboration with department of integrated medicine biomedical statistics and data coordinating center as well.

- Investigating methodology of collection and management of RWD focusing on data quality
- Developing new evaluation methodology for medicinal products as well as medical devices by integrating clinical trial data and RWD
- Exploring new clinical evaluation indicator with utilizing RWD

In order to obtain high quality evidence from clinical research, biostatistical literacy such as “designing scientific protocol”, “data management for ensuring conformity of data” and “Statistical analysis and appropriate interpretation of study results” is really important.

In addition to above, we aspire to foster expert researchers with expertise in epidemiology, statistics, bioinformatics and medical information which are foundation of medical data science.



Fig. Scientific and innovative research for providing cutting-edge clinical evidence utilizing RWD and fostering expert researchers

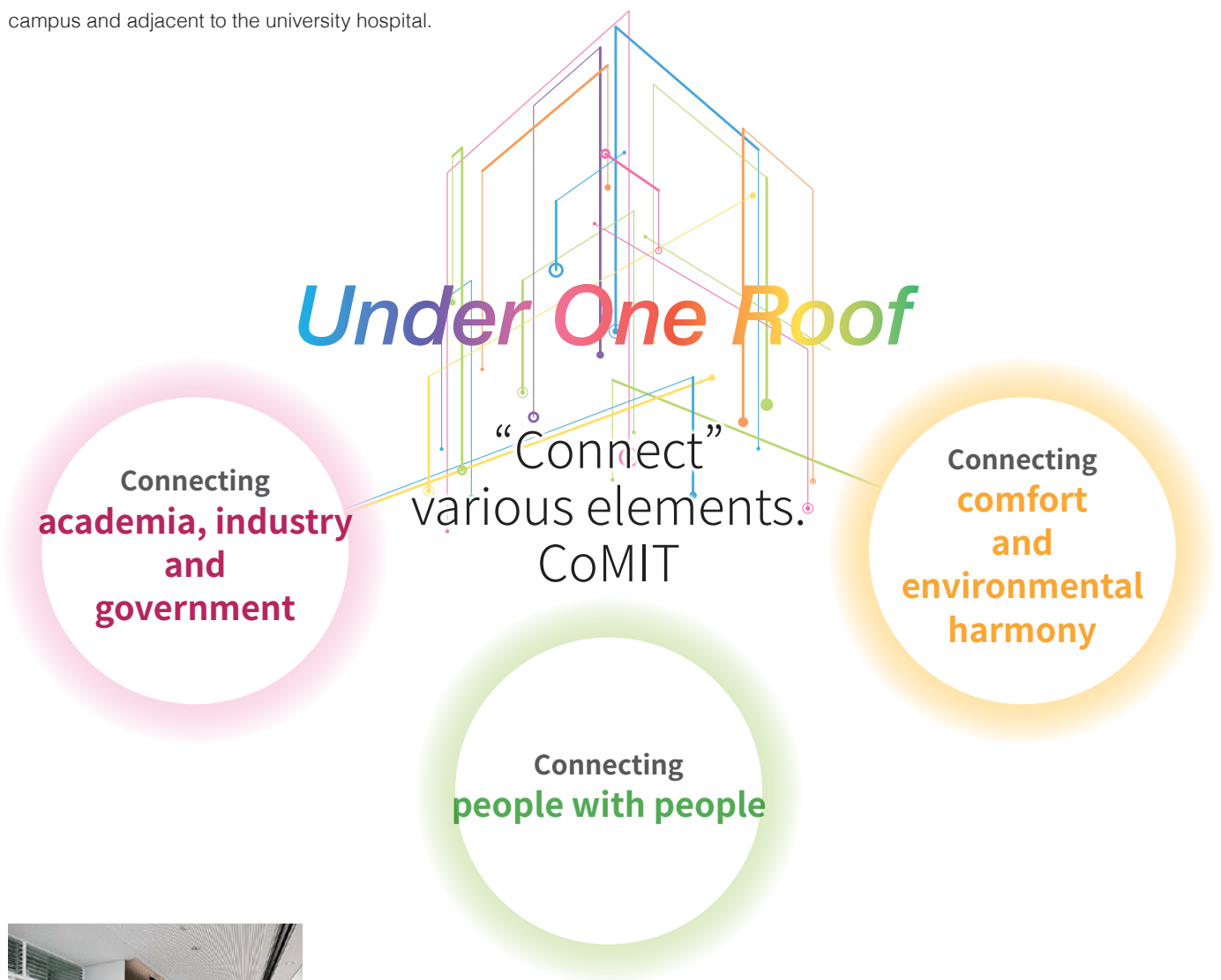


# Open lab space

## Realization of a flexible research space that is central to Under One Roof.

The upper floors of the CoMIT serve as laboratories and research facilities, centered around the open lab. This area, equipped with floor-specific seminar rooms and shared spaces, functions as the operational base for the research and development department. The open lab is designed to provide an optimal location for industry, government, and academia collaboration, bringing together researchers from companies, external institutions, and universities, all within the university campus and adjacent to the university hospital.

This area is designed to support industry-academia collaboration in the Center's research activities by ensuring high levels of security on a floor and room-by-room basis while creating a sense of connection through shared areas on each floor, allowing people to experience both the "overall facility connectivity" and the "space for researchers' contemplation."



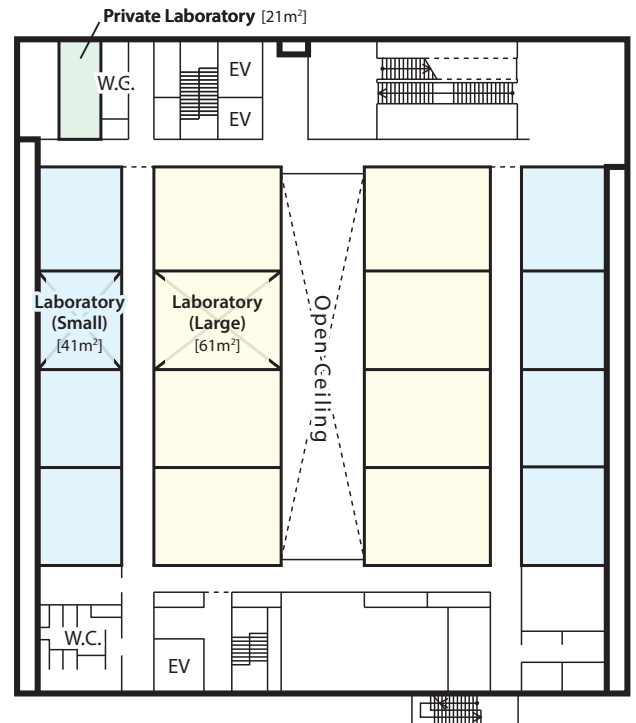
Open Lab Area Entrance



Glass wall in the laboratory that connects to the outside

## An open lab and shared space equipped with high standard functionalities and expandability.

The open lab is basically a set of two laboratories, one large and one small, separated by a corridor, but we are open to consultations depending on the situation. Equipped with high standard functions and expandability, the flat room is highly versatile and allows for a variety of layouts for efficiency. It is designed to meet various research and uses, such as base consolidation and satellite use.



**Laboratory (Large) [61m<sup>2</sup>]**



**Private Laboratory [21m<sup>2</sup>]**



**Laboratory (Small) [41m<sup>2</sup>]**



Floor-exclusive meeting space

# Common space



1F

## Multimedia Hall



### Meeting room / Seminar room Information

2F

**Seminar room**  
(0224)



**Meeting room**  
(0230)



2F | Seminar room

6F

**Seminar room**  
(0605)



**Meeting room**  
(0610)



2F-6F | Meeting room

7F

**Seminar room**  
(0705)



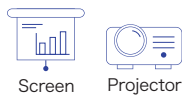
**Meeting room**  
(0710)



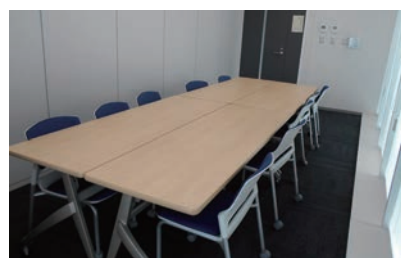
6F~9F | Seminar room

8F

**Seminar room**  
(0805)



**Meeting room**  
(0810)



7F~9F | Meeting room

9F

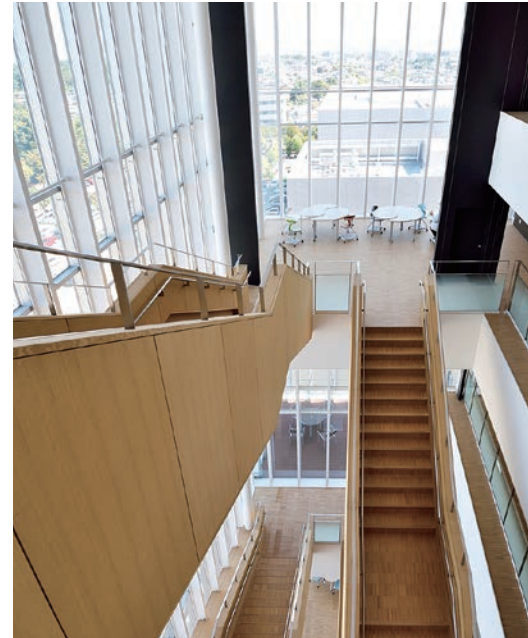
**Seminar room**  
(0905)



**Meeting room**  
(0910)

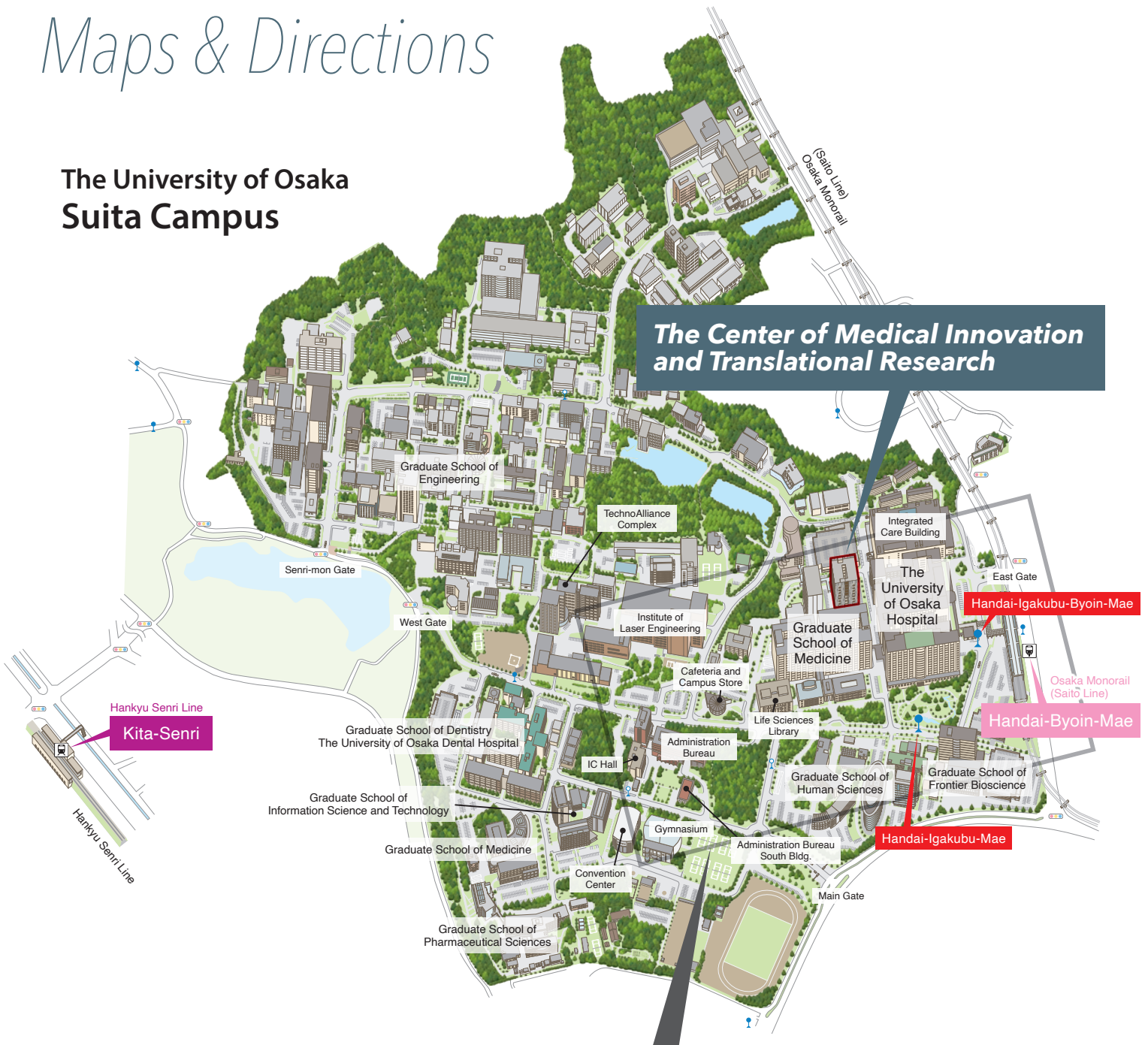


# Free space



# Maps & Directions

## The University of Osaka Suita Campus



# Access Map

## Directions

### By train

#### Monorail

- 5 minutes on foot from Monorail Handai-Byoin-Mae.

#### Train

- 20 minutes east on foot from Kita-Senri, Hankyu Senri Line.

### By bus

#### Kintetsu Bus

- Bus for Handai-Honbu-Mae from Ibaraki-Shi, Hankyu Kyoto Line. Exit at Handai-Igakubu-Mae. (5 minutes)

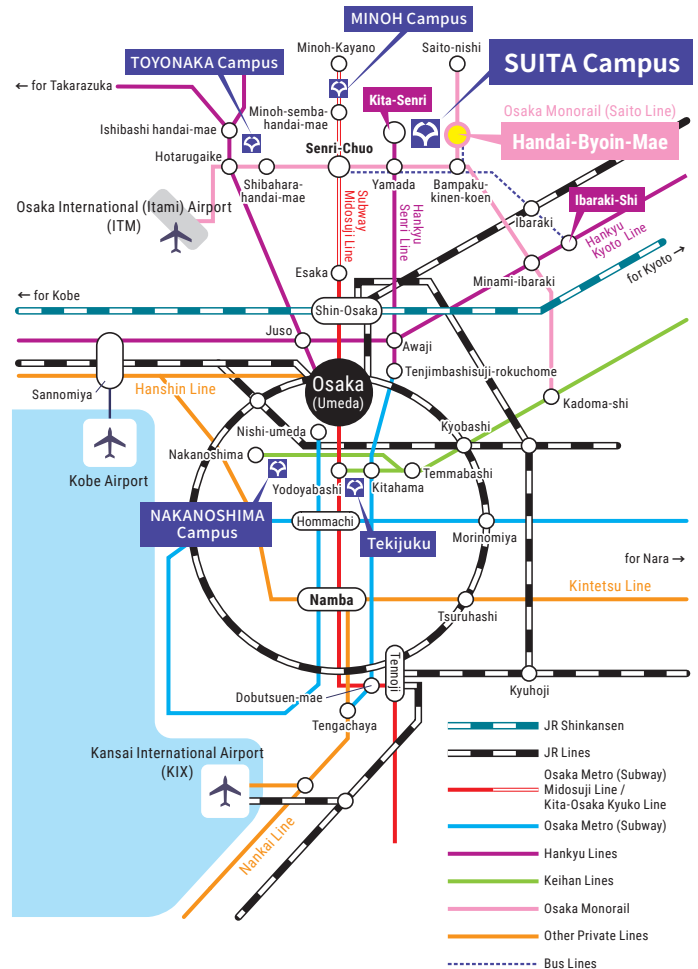
### From airport

#### From Osaka International (Itami) Airport

- Monorail to Handai-Byoin-Mae. (1 hour)

#### From Kansai International Airport (3 choices)

- JR line to Osaka
  - (Change) Subway Midosuji Line to Senri-Chuo
  - (Change) Monorail to Handai-Byoin-Mae. (2 hours)
- Nankai Line to Namba
  - (Change) Subway Midosuji Line to Senri-Chuo
  - (Change) Monorail to Handai-Byoin-Mae. (2 hours)
- Airport Bus to Osaka Airport
  - (Change) Subway Midosuji Line to Senri-Chuo
  - (Change) Monorail to Handai-Byoin-Mae. (2 hours 30 minutes)



## Contact Us

### Graduate School of Medicine, The University of Osaka The Center of Medical Innovation and Translational Research

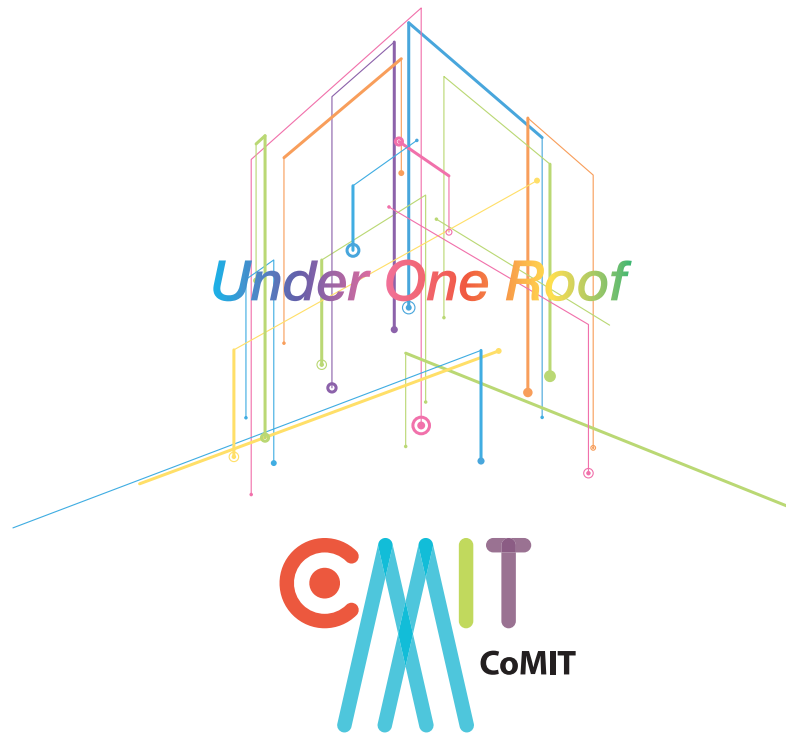
address 2-2 Yamadaoka, Suita, Osaka 565-0871 Japan

Email comit@office.med.osaka-u.ac.jp



<https://www.med.osaka-u.ac.jp/pub/comit/en/>





Graduate School of Medicine, The University of Osaka  
***The Center of Medical Innovation  
and Translational Research***

<https://www.med.osaka-u.ac.jp/pub/comit/en/>