

Call for applications: 2026 Joint Usage and Joint Research Programs, Institute of Advanced Medical Sciences, Tokushima University

1st December 2025

Tokushima University, also known as University of Tokushima, has a long history of advanced medical sciences. Miyoshi muscular dystrophy and adjuvant disease were discovered here. Immunoproteasomes, hepatocyte growth factor, and cathepsin L as well as many other disease-related human molecules have their home in our campus. In 1961, the medical school of Tokushima University founded three laboratories of enzyme research, which successfully formed Institute for Enzyme Research in 1987. In 1998, Institute for Genome Research was founded to extend medical research to focus on genome functions. In 2010, Diabetes Therapeutics and Research Center was formed to overcome the diabetes by creating platform for the collaborations between clinical and basic researchers. In 2013, Fujii Memorial Institute of Medical Sciences was founded in memory of Professor Setsuro Fujii, one of the founding professors of original enzyme research laboratories. In 2016, the University has decided to merge these four institutes to form the Institute of Advanced Medical Sciences, in order to facilitate multi-disciplinal and trans-omic studies for advanced medical sciences.

Supported by the Joint Usage and Joint Research Programs of the MEXT, Japan, the Institute of Advanced Medical Sciences, Tokushima University, calls for the applications for the joint usage and/or joint research as follows. The proposed expenses should be used within the fiscal year 2026 which begins on 1st April 2026 and ends on 31st March 2027.

(A) Joint Usage

State-of-art research facility of our institute is open for the support of the research in the following 5 aspects. In principle, travel expenses will be supported (However, if travel expenses are not required, the funds may be used for consumables). Up to 150,000 Japanese yens per successful proposal per fiscal year will be supported for the following experiments.

A-1. Proteome analysis (organized by Professor Hidetaka Kosako)

Proteome analysis using high resolution mass spectrometers (Orbitrap Fusion and Q Exactive Plus, Thermo Fisher Scientific; timsTOF HT, Bruker). Proteome Discoverer, BioPharma Finder, and PEAKS can be used for data analysis. Representative costs are 15,000 yen per sample for identification and quantitation of proteins from electrophoresed gel fragments or immunoprecipitates, 20,000 to 30,000 yen per sample for identification and quantitation of PTMs such as phosphorylation and ubiquitination of proteins, 15,000 to 30,000 yen per

sample for global identification and quantitation (by TMT labeling, PRM, DIA, and LFQ) of proteins and PTM sites in complex samples such as cell lysates. Please contact Professor Kosako for details (kosako@tokushima-u.ac.jp). Human sample analysis requires the prior approval from appropriate intramural committee.

A-2. Genome editing of laboratory mice or cultured cells (organized by Professor Tatsuya Takemoto and Associate Professor Shun Sawatsubashi)

Generation of genetically modified mice by an improved zygote electroporation technology of CRISPR/Cas9-mediated genome editing. Costs are 700,000-800,000 yen for generating a gene-disrupted mouse or a point mutant mouse, 1,000,000-1,200,000 yen for generating a long-DNA knock-in mouse (e.g. an EGFP knock-in reporter mouse). Costs for mouse breeding and shipping are also required. Please contact Professor Takemoto for details (takemoto.tatsuya@tokushima-u.ac.jp)

Generation of genome-edited cultured cells using the CRISPR/Cas9 system, including gene knock-out cells and reporter knock-in cells by the VIKING method (Sci Rep.8,593,2018). Costs are 150,000-400,000 yen for generating genome-edited cultured cells. If necessary, we can also establish cell lines from single cells, sort cells using a fluorescent reporter, and analyze genome sequences. A separate fee is required for these procedures. Please contact Associate Professor Sawatsubashi for details (shun-sawa2@tokushima-u.ac.jp)

A-3. Metabolome Analysis (organized by Professor Seiichi Oyadomari)

Metabolomic analysis is conducted using a high-resolution mass spectrometer (Thermo Fisher Scientific Q Exactive) in combination with the Intrada Amino Acid column, developed by Intact Corporation as the world's first LC-MS column dedicated to non-derivatized amino acid analysis. This platform enables highly sensitive and reproducible quantification of amino acids and related metabolites from a wide range of biological samples, including plasma, serum, tissue extracts, and cultured cells. Because cysteine contains a thiol group (–SH) that is readily oxidized, it cannot be stably detected under non-derivatized conditions; therefore, its oxidized form, cystine (Cys–S–S–Cys), is quantified instead. Costs are 10,000 yen per sample for non-derivatized amino acid analysis. Additional costs for sample preparation and shipping may be required. Please contact Professor Oyadomari for details (oyadomar@tokushima-u.ac.jp).

A-4. Analysis of the Unfolded Protein Response and Integrated Stress Response (organized by Professor Seiichi Oyadomari)

Stress responses induced by compound treatment or changes in gene expression are analyzed

to determine which of the three canonical branches of the unfolded protein response (UPR)—IRE1, PERK, and ATF6—are activated. The activation status of each pathway is assessed using reporter assays in HEK293 cells. In addition, the contribution of the four upstream kinases that activate the integrated stress response (ISR)—HRI, PKR, PERK, and GCN2—is examined through comparative analyses using quadruple knockout (4KO) fibroblasts and related cell lines. Costs are approximately 100,000–150,000 yen per pathway analysis (any costs not covered by shared research funds must be borne by the user). Please contact Professor Oyadomari for details (oyadomar@tokushima-u.ac.jp).

A-5. Biomolecular size measurement and interaction analysis (organized by Professor Tomohide Saio)

Biomolecular size measurement using the SEC-MALS system (Wyatt DAWN HELEOS II 8+). The size of protein homo/hetero oligomers after gel filtration is measured by multi-angle light scattering. NMR (Bruker Avance III 500 MHz) is used for structural characterization and interaction analysis of biomolecules and peptides. The total number of the projects is limited to 5 per year. Costs for SEC-MALS are 7,000-15,000 yen/sample depending on the number of measurement conditions. Costs for NMR measurements are 12,000-80,000 yen/sample depending on the type of measurement, but the amount varies depending on the sample and measurement. Please contact Professor Saio for details (saio@tokushima-u.ac.jp).

(B)Joint Research

The Institute welcomes the proposal for collaborative joint research with the following laboratories. In principle, up to 300,000 Japanese yens per proposal per fiscal year will be supported to a successful research proposal.

Multiple applications from one laboratory will be accepted if the research themes are different.

B-1. Division of Protein Expression

Professor Yasuo Shinohara, yshinoha@genome.tokushima-u.ac.jp

B-2. Division of Cell Signaling

Professor Hidetaka Kosako, kosako@tokushima-u.ac.jp

B-3. Division of Embryology

Professor Tatsuya Takemoto, takemoto.tatsuya@tokushima-u.ac.jp

B-4. Division of Molecular Biology

Professor Seiichi Oyadomari, oyadomar@genome.tokushima-u.ac.jp

B-5. Division of Molecular Neurobiology

Professor Suehiro Sakaguchi, sakaguchi@tokushima-u.ac.jp

B-6. Division of Pathology and Metabolome Research for Host Defense

- Professor Hiroshi Kido, kido@tokushima-u.ac.jp
- B-7. Division of Molecular Life Science
- Professor Tomohide Saio, saio@tokushima-u.ac.jp
- B-8. Division of Experimental Immunology
- Professor Izumi Ohigashi, ohigashi@genome.tokushima-u.ac.jp
- B-9. Division of Pathogenetic Signaling
- Professor Kiyohito Mizutani, kiyohito_mizutani@tokushima-u.ac.jp
- B-10. Division of Biomechanics and Signaling
- Associate Professor Hajime Fukui, fhajime@tokushima-u.ac.jp
- B-11. Division of Molecular CytoMorphology
- Associate Professor Yoshiyuki Fukuda, fukuday@tokushima-u.ac.jp
- B-12. Division of Gene Regulation
- Associate Professor Hotaka Kobayashi, kobayashi.hotaka@tokushima-u.ac.jp
- B-13. Department of Immunology and Parasitology
- Professor Koji Yasutomo, yasutomo@tokushima-u.ac.jp
- B-14. Department of Oral Pathology
- Professor Takaaki Tsunematsu, tsunematsu@tokushima-u.ac.jp

Eligibility

A researcher affiliated with a university or a public research institute, or a researcher approved by the Director of our Institute. The approval from the affiliated organization is required. The Institute of Advanced Medical Sciences does not discriminate on the basis of nationality, race, religion, disability, gender, marital status, sexual orientation, age, or any other illegal or unfair basis.

Application

Please convert the complete application that contains the following items to a single PDF document within two pages, and send as an e-mail attachment to <kyodo@tokushima-u.ac.jp> with the subject line: “Application for Joint Usage Joint Research Programs”. Application deadline is Day Month 2026.

Please obtain the approval of your department head for this application, but no written consent form is required.

- Personal information: Full name, Degree(s), Title, Organization, Mailing address, Phone number, E-mail address, and Country of citizenship
- Three names of your references
- Representative research records, chiefly within the last five years
- Proposed research: Title, Aspect (choose one from Joint Usage A1-A5 and Joint Research

B1-B14, Contact researcher at our Institute, Research aims, Methods, Necessities, Outcomes, Budget, and Research duration.

Schedule

Deadline of the application is 6th February 2026. Successful applicants will be notified before the end of March 2026. Approved joint usage and/or joint research should be performed between 1st April 2026 and 31st March 2027.

Selection and Notification of Selection

As for joint research, we will select research topics related to "chronic inflammation" as priority research topics.

Applicants will be notified of the decision and the amount of research expenses by the end of March after deliberation by the committee, which includes academic experts outside our university.

Obligations

Successfully selected applicants must send us a brief report of their research activities and findings within two pages. The report should include the publication of the papers and the presentations at scientific meetings. A single PDF document that contains the report has to be sent to us via e-mail by 31st March 2027.

When the selected applicant is reporting the findings out of the Joint Usage and Joint Research Programs in an academic paper, she/he must state clearly in that paper that the research was carried out under the support of The Joint Usage and Joint Research Programs, the Institute of Advanced Medical Sciences, Tokushima University. A copy of that paper must be sent to us.

The leader or a member of the project will be requested to make a presentation at the Joint Usage and Joint Research Programs Conference.

Handling of Intellectual Property Rights

In principle, the degree of contribution of each researcher and his/her institution to the invention will be taken into consideration, and the attribution of the invention will be determined through consultation.

Export Security Control

Procedures based on Security Export Control Regulations of Tokushima University may be required when providing research equipment, samples, technical guidance, etc. to overseas countries or conducting joint research with overseas researchers.

Contact

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