

List of Research projects Conducted by Academic Advisors (Applied Natural Medicine)

Educational area Responsible teacher Contact address	Research contents
Neuromedical Science Professor TOHDA Chihiro (Sugitani Campus) chihiro@inm	<ul style="list-style-type: none"> • Elucidation of the molecular mechanism of restoring the neuronal network, and crosstalk between the central nervous system and peripheral organs to activate neural function. • Traditional medicine research for developing fundamental therapeutic drugs for Alzheimer's disease, spinal cord injury, cervical spondylosis myelopathy, glaucoma, and sarcopenia. • Clinical study aiming to develop new botanical drugs and new usage of Kampo formulas. • Clinical study to analyze factors affecting physical and mental health and to identify biomarkers of wellbeing. • Consilienceology for Wakan-yaku 1) Diagnosis for functional mental diseases based on the Wakan-yaku response, and clarification of molecular mechanisms for the diseases 2) Development of novel Wakan-yaku prescriptions to prevent lethal recurrence of heart failure
Host Defences Professor HAYAKAWA Yoshihiro (Sugitani Campus) haya@inm	<ul style="list-style-type: none"> • Study of NK cell biology and its roles in immunity • Role of innate immune responses in cancer progression • Immunological study of inflammatory & allergic diseases • Modulation of immune responses and immunological diseases by Kampo medicines • Study to regulate cancer progression & metastasis • Elucidation of novel actions of kampo medicines and food factors on the basis of modulation of intraluminal bile acid metabolism in gastrointestinal tract
Medicinal Resource Science Professor SHOJI Tsubasa tsubasa@inm	<ol style="list-style-type: none"> 1. Molecular regulation of alkaloid and terpenoid pathways in medicinal plants of the Solanaceae family. 2. Novel regulatory mechanisms of alkaloid pathways in tobacco plants. 3. Biosynthesis and accumulation of natural sweeteners. 4. Collaborate with industry partners to apply our research to the stable supply and production of herbal medicines.
Natural Products & Drug Discovery Professor MORITA Hiroyuki (Sugitani Campus) hmorita@inm	<ul style="list-style-type: none"> • Studies on biosynthesis of naturally occurring bioactive compounds • Structural basis for secondary metabolite enzymes • Enzyme engineering for novel drug development • Isolation of bioactive compounds from plants, microorganisms, and marine organisms • Investigation of Asia's natural resources not fully utilized • Discovery of natural anticancer agents from medicinal plant resources by employing a novel antiausterity screening strategy • Chemical investigation of medicinal plants and search for novel bioactive secondary metabolites • Investigation of the structure-activity relationship of the active natural compounds and their mechanism of action against cancer cell survival pathways • Discovery of metabolomics biomarkers associated with cancer cells by utilizing FT-NMR and MS strategy
Complex Biosystem Research Professor NAKAGAWA Yoshimi (Sugitani Campus) ynaka@inm	<ul style="list-style-type: none"> • Functional analysis of transcription factors that regulate glucose and lipid metabolism • Study for nutrient metabolism regulation by cell-cell and tissue-tissue interaction • Study for the molecular mechanism of improvement of lifestyle-related diseases by Wakan-yaku • Study for the mechanism of lifestyle-related diseases caused by sleep disorders • Establishment of information science analysis using integrated omics analysis

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Presymptomatic Disease Professor KOIZUMI Keiichi (Sugitani Campus) kkoizumi@inm	<ul style="list-style-type: none"> • Understanding of the fluctuation of biometric information and its medical applications. • Development of the glutaminase inhibitor and its medical applications. • Elucidation of the function of immunostimulatory nanoparticles and nucleotide degradant discovered by traditional Japanese medicine (Kampo formula) and their medical applications. • Elucidation of the pathological mechanism and the search for new seeds of medicine for medical applications in enteric immune diseases.
Clinical Pharmaceutics Professor KATO Atsushi (Sugitani Campus) kato@med	<ul style="list-style-type: none"> • Drug seed discovery research and evaluation of drugs targeting diabetes, allergic disorders, and other illnesses centered on glycomimetic alkaloids and herbal medicine-derived compounds • Biochemical research concerning glucolipid metabolic disorders focused on the properties of glycoproteins, glycohydrolases, and glycosyltransferases
Engineering based on Genetic Information Professor KUROSAWA Nobuyuki (Gofuku Campus) kurosawa@eng	<ul style="list-style-type: none"> • Development of platform technology for the production of monoclonal antibodies against difficult antigens. • Development of monoclonal antibodies for next-generation treatment and diagnosis
Synthetic and Medicinal Chemistry Professor ABE Hitoshi (Gofuku Campus) abeh@eng	<p>This field focuses on creation of novel “functional organic molecules” based on the advanced synthetic organic chemistry. The newly designed organic molecules possess some potential to contribute to various fields of science such as discovery of novel medicines and agrichemicals. Research in our group is primarily aimed toward the development of catalytic reactions and methods for organic synthesis for the functional organic molecules.</p>
Pharmacology Associate Professor TAKASAKI Ichiro (Gofuku Campus) takasaki@eng	<ul style="list-style-type: none"> • Elucidation of the mechanisms of chronic pain/pruritus, neuropsychiatric disorders, cancer, etc. • Drug discovery of novel small-molecule therapeutics • Pharmacological analysis of the new small-molecule compounds
Biofunctional Chemistry Professor IKAWA Yoshiya (Gofuku Campus) yikawa@sci	<p>RNAs play versatile roles in biological systems because they not only serve as a genetic material but also act as functional molecules. We study the molecular basis of naturally occurring RNAs with catalytic and receptor functions. Another interest of our group lies in the artificial generation of RNAs with desirable functions through rational and evolutionary approaches.</p>
Cell Biology Professor KARAHARA Ichirou (Gofuku Campus) karahara@sci	<p>Studies on the mechanisms of plants' responses to various terrestrial / cosmic environmental factors at organ / tissue level using various morphological techniques including three-dimensional macroscopic / ultrastructural analyses</p>

• A portion of email address is listed in the contact address. Please use it for preliminary consultations with the relevant academic advisor in the field of your choice. Please add ".u-toyama.ac.jp" after the address.

Example) abc@def → abc@def.u-toyama.ac.jp