

2024年度大学院共通科目 共通基礎科目・特論(コア講義)概要  
2024 General Basic Subjects (Core Lectures) Outline

講義番号	講義題目	担当教員(分野)	内 容
1	Introduction to membrane traffic	Yamamoto Yasunori (Membrane Dynamics)	Molecular mechanisms of membrane traffic and cell-free assay systems for analyzing membrane traffic will be presented.
2	Introduction to Neurodegenerative Diseases	Adachi Naoko (Neuronal Signaling)	Neurodegenerative diseases are characterized by the progressive loss of neurons, often leading to death. In this lecture, we will discuss the mechanisms and treatments for Alzheimer's disease, Parkinson's disease, and spinocerebellar ataxia.
3	Essential Genome Editing – What you can do at Kobe University	Ito Keisuke (Neural Differentiation and Regeneration)	Genome editing has revolutionized current medical biology. Now, if you want to examine the function of a gene, you can easily induce a knockout and determine its in vivo function. In our laboratory, we have been conducting genome editing using mice for many years and have produced various results. In this lecture, I will introduce the principles of genome editing, its methods, and examples of our work.
4	Basics of Lipid Signaling	Itoh Toshiki (Membrane Biology)	In this lecture, the basic principles of the signal transduction pathway mediated by lipid molecules in the biological membrane will be introduced.
5	Introduction of morphological approach for the understanding of human carcinogenesis	Shigeoka Manabu (Pathology)	The rise of new techniques such as next generation sequencing is resulting in the rapid discovery of the causative genes for a variety of diseases not limited to cancer. However, as seen in the research results of our lab that I introduce, it is also possible to develop studies using traditional observations of morphological changes. The tumor microenvironment consists of tumor cells and stroma including inflammatory cells, immune cells, fibroblasts and so on. Pathologists observe the presence of stromal cells in tumor tissues during routine diagnosis. I have studied “Cell-cell interaction between tumor cells and macrophages” in the oral squamous cell carcinoma microenvironment. I believe that in your research as well, making tissue observations and analyzing molecular expression in tissue sections using IHC or the like can provide research clues, and so I encourage you to incorporate observations of morphological changes into your research.
6	Introduction of human herpesvirus 6	Nishimura Mitsuhiro (Clinical Virology)	Human herpesvirus 6 (HHV-6) includes two distinct virus species, HHV-6A and HHV-6B, and the HHV-6B especially is integrated into human society with an extremely high infection rate. HHV-6 permanently resides in host body after the primary infection, and causes several diseases. In this lecture, features of HHV-6 are explained with introduction of key research findings by our laboratory and other groups.
7	Basic Principle of Analytical Chemistry with Mass Spectrometry	Shinohara Masakazu (Molecular Epidemiology)	Overview and applications of Mass Spectrometry based analytical chemistry, especially Proteomics and Metabolomics, for medical research.
8	Dynamic analysis of immune inflammation and bone destruction by intravital imaging techniques	Kikuta Junichi (Immunology)	Intravital imaging techniques facilitate investigation of cellular dynamics in immune inflammation and bone destruction in vivo, and would thus be useful for evaluating the efficacy of novel drugs. In this lecture, we show the data of intravital imaging, and also discuss its further application.