

Molecular Dissection of Host-Pathogen interaction

The basic and translational immunology



Overview

Biochemically dynamic host is continuously challenged by numerous fast evolving pathogens. These pathogens try to perturb the host immune homeostasis through hijacking or skewing cellular biochemical pathway for its own benefit, at the same time immune system defends from invasion and propagation of invading microbes through variety of biochemical mediators generated via complex network of cell signaling.

In this lecture series, host immune system as the homeostatic regulatory system activated during microbial infection will be dissected at the molecular level. In addition, this course will also provide an overview of how a pathogen escapes host immune responses. Those who take this course are supposed to acquire comprehensive knowledge regarding host-pathogen relationships that are based on a multitude of molecular interactions.

Course Title	Molecular dissection of host-pathogen interaction: The basic and translational immunology
Dates for the course	17th Feb. 2018 to 2nd Mar. 2018 (14 days)
You should attend if	<ul style="list-style-type: none">• You are a bachelor, master or research student of biological, chemical or medical science.• If you want to pursue research in the field of infectious diseases.• If you are a health-care professional.
Host Institute	Indian Institute of Science Education and Research Bhopal
Registration Fee	The participation fees for taking the course is as follows: <ul style="list-style-type: none">• Student Participants: Rs. 2000• Faculty Participants: Rs. 2000• Industry Participants: Rs.5000 The above fee is towards participation in the course, the course material, and laboratory equipment usage charges.
Accommodation	If available, institute accommodation can be availed on payment bases.

Topics Covered

General introduction to host immune system, Innate immune responses to infection, Humoral Innate Immunity, Adaptive immune responses to host defense, the discovery of B cell and T cell diversity, Cytokines and their intracellular signaling pathways, Genetic abnormalities and immunodeficiency, the therapeutic principle that is based on a molecular abnormality responsible for a disease, Immune evasion against host defense mechanisms, Cancer and Immunity and Immunity against Bacterial, Viral and Parasitic infection

Course Faculty



Prof. Akinori Takaoka

Institute for Genetic Medicine, Hokkaido University, Japan

His main focus of research is on innate immunity, in particular, characterization of molecular mechanisms underlying cellular response to microbial infection and cancer, with the identification of possible therapeutic targets.



Dr. Himanshu Kumar

IISER Bhopal, Bhopal, India

His research interest lies in the investigation of influence of extrinsic and intrinsic factors during microbial infection at first level of host defense system, particularly, post-transcriptional regulations of innate immune signaling pathways for the development of next generation RNA-based therapeutics.



Hands-on training

Isolation of human PBMCs and stimulation with TLR ligands.

Estimation of inflammatory cytokines in samples by RT-PCR or ELISA.

Course Coordinator

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Lab Website