

Symposium

S1 - Viral infection and immune responses

May 29th(Wed) 09:00-11:00, Room 101~102

Organizer & Chair Eui-Cheol Shin (Korea Virus Research Institute)

Chair Ji Eun Oh (KAIST)

Speaker1	25'	Hyunjoon Kim (Korea Virus Research Institute)	KLK5-Mediated Activations of Betacoronavirus Spike Proteins: Implications for a Therapeutic Target
Speaker2	25'	Akinori Takaoka (Hokkaido University)	Novel sensing modes of action mediated by innate nucleic acid sensors for antiviral defense
Speaker3	20'	Seon-Hui Hong (The Rockefeller University)	Mechanisms underlying attenuation of the yellow fever virus 17D vaccine strain
Speaker4	25'	Ji Eun Oh (KAIST)	B cell and antibody response against SARS-CoV-2 in solid cancer patients
Speaker5	25'	Eui-Cheol Shin (Korea Virus Research Institute)	IL-15-induced bystander T cell activation in human viral disease

S2 - Ferroptosis: recent progress and new insights-KSMCB Joint Symposium

May 29th(Wed) 09:00-11:00, Room 106~107

Organizer & Chair Cheol-Sang Hwang (Korea University), Sung Eun Kim (Korea University)

Chair Eun-Woo Lee (Korea Research Institute of Bioscience & Biotechnology)

Speaker1	30'	Michael Overholzer (Memorial Sloan Kettering Cancer Center)	Spatiotemporal dynamics of ferroptosis
Speaker2	25'	Hun-Taeg Chung (University of Ulsan)	Integrated Stress response and ferroptosis-mediated cell death
Speaker3	25'	Cheol-Sang Hwang (Korea University)	The MARCHF6 E3 ubiquitin ligase is a critical regulator of ferroptosis
Speaker4	20'	Namgyu Lee (Dankook University)	Selenium reduction of ubiquinone via SQOR suppresses ferroptosis
Speaker5	20'	Yun Pyo Kang (Seoul National University)	Targeting lung cancer cysteine metabolism to accelerate ferroptosis

S3 - AI in Digital Biology

May 29th(Wed) 09:00-11:00, Room 201~202

Organizer Jin-Wu Nam (Hanyang University)

Co-organizer & Chair Jeong Hyobin (Yonsei University)

Speaker1	30'	Minji Jeon (Korea University)	Transcriptome-based Drug Discovery using AI
Speaker2	30'	David Ascher (The University of Queensland)	Predictive tools for personalised medicine and drug development
Speaker3	30'	Dariusz Plewczynski (University of Warsaw)	Predicting chromatin interactions and gene expression by artificial intelligence methods and polymer biophysical simulations
Speaker4	30'	Esa Pitkänen (University of Helsinki)	Deep representation learning for cancer medicine

S4 - Pioneering Mouse Model Studies for Metabolic and Endocrine Disorders

May 29th(Wed) 09:00-11:00, Room 203~204

Organizer Je Kyung Seong (Seoul National University), Sungsoon Fang (Yonsei University), Yun-Hee Lee (Seoul National University)

Chair Cheol Soo Choi (Gachon University), Jongsoon Lee (Soonchunhyang University)

Speaker1	35'	Byung-Hyun Park (KAIST)	p21-activated kinase 4 counteracts PKA dependent lipolysis by phosphorylating FABP4 and HSL
Speaker2	35'	Soo-Hyun Kim (St. George's University of London)	Kallmann syndrome-associated WDR11 regulates primordial germ cell development via canonical and noncanonical Hedgehog signaling pathways
Speaker3	30'	Hironori Waki (Akita University)	Epigenetic Regulation of Brown-Fat-Specific Genes by Nuclear Factor I-A and Its Role in Energy Homeostasis
Short talk	20'	Kyunghee Lee (ProAbTech Ltd)	In vivo study of newly developed albumin-conjugated urate oxidase for gout treatment

S5 - Pluripotency, Differentiation and Reprogramming in Stem Cells

May 29th(Wed) 09:00-11:00, Room 205

Organizer & Chair Hong-Duk Youn (Seoul National University), Ja-Lok Ku (Seoul National University)

Speaker1	25'	Tae Wan Kim (DGIST)	Human pluripotent stem cell-based cell replacement therapy to Parkinson's disease
Speaker2	25'	Jinwook Choi (GIST)	Inflammatory Niche in stem cell plasticity and niche remodeling
Speaker3	25'	Jang Hwan Kim (KRIBB)	The intermediate cells of reprogramming: potential applications in regenerative medicine
Speaker4	30'	Kyung Min Noh (European Molecular Biology Laboratory)	Insights from studying chromatin regulators in stem cell models of neurodevelopment and disease
Speaker5	15'	Han Teo Lee (Seoul National University)	Epigenetic regulation assisting preservation of pluripotency against DNA damage

S6 - T and B cell collaboration

May 29th(Wed) 15:40-17:40, Room 101~102

Organizer & Chair Yeonseok Chung (Seoul National University)

Chair Hye-Young Kim (Seoul National University)

Speaker1	30'	Di Yu (The University of Queensland)	Regulation of humoral immunity and vaccine response by ferroptosis
Speaker2	30'	You-Me Kim (KAIST)	Role of transcription factor EB in antibody responses
Speaker3	30'	Youn Soo Choi (Seoul National University)	Transcriptional regulation of immune synapse and T-dependent humoral immunity
Speaker4	30'	Hideki Ueno (Kyoto University)	The origin and features of human tonsil-resident memory CD4+ T cells

S7 - Recent Breakthrough in Osteobiology

May 29th(Wed) 15:40-17:40, Room 106~107

Organizer & Chair	Young Yang (Sookmyung Women's University)	
Speaker1	25' Ji Hyeon Ju (The Catholic University of Korea)	Exploring bone biology using induced pluripotent stem cell
Speaker2	25' Kyung-Hyun Park-Min (Hospital for special surgery & Weill cornell medicine)	Origin of Osteoclasts
Speaker3	25' Eun Young Lee (Seoul National University)	Exploring Multifaceted Aspects of Osteoclastogenesis in Chronic Inflammatory Arthritis
Speaker4	25' Michelle M McDonald (St. Vincent's Clinical School)	Osteoclasts Recycle via Osteomorphs during RANKL-stimulated Bone Resorption

S8 - Membrane engineering toward protein secretion control

May 29th(Wed) 15:40-17:40, Room 201~202

Organizer & Chair	Joo-Yeon Yoo (POSTECH)	
Speaker1	30' Tae-Young Yoon (Seoul National University)	Elucidation of membrane protein folding with single-molecule magnetic tweezers
Speaker2	30' Jae-Myung Suh (KAIST)	In vivo profiling of tissue-specific secretory proteins
Speaker3	30' Hyun (Joy) Kim (Seoul National University)	Substrate and cleavage site selection of the signal peptidase complex
Speaker4	30' Jia-Wei Hsu (National Taiwan University)	How to manage failed delivery: the discovery of coat adaptor in endocytic trafficking

S9 - New Advances and Multifaceted Aspects of Chemical Biology

May 29th(Wed) 15:40-17:40, Room 203~204

Organizer & Chair	Eun-Woo Lee (KRIBB), HoJeong Kwon (Yonsei University)	
Speaker1	30' Christopher M. Overall (The University of British Columbia)	Development of Novel Molecular Correctors to Restore Impaired Enzymic and Scaffolding Functions in an Immunodeficient Patient Identified by Positional Proteomics
Speaker2	30' Marcus Conrad (Helmholtz Zentrum München)	Modulating Ferroptosis for Disease Prevention
Speaker3	20' Hyun-Woo Rhee (Seoul National University)	Spray-type modifications: an emerging concept of PTM study
Speaker4	20' Donghyuk Shin (Yonsei University)	Recent Advances of Structure-Based Drug Discovery
Speaker5	20' Kyung S. Lee (National Institutes of Health)	From Peptides to Small Molecules: Targeting Polo-like Kinase 1 for Anticancer Therapy

S10 - Epigenetics and Chromatin Structure

May 29th(Wed) 15:40-17:40, Room 205

Organizer & Chair	TaeSoo Kim (Ewha Womans University)	
Speaker1	20' Jinju Han (KAIST)	Nuclear AGO1 Shapes Brain Development and Social Behaviors
Speaker2	20' Jun-Yeong Lee (Kyungpook National University)	Unveiling the role of CpG islands in dual-mode gene regulation and its implications
Speaker3	20' Minhee Park (KAIST)	To Build and Visualize Chromatin: Engineering Epigenome
Speaker4	30' Jun-An Chen (Academia Sinica)	Navigating the Nexus of Epigenetics and Epitranscriptomics in Aging and Neurodegeneration.
Speaker5	30' Michael-Christopher Keogh (Epicyper)	Nucleosome context dictates the histone code

S11 - Protein Structure & Design

May 30th(Thu) 09:00-11:00, Room 101~102

Organizer & Chair	Ho Min Kim (KAIST)	
Speaker1	30' Justin Kollman (University of Washington)	Polymerization is a mechanism of enzyme regulation
Speaker2	30' Jae-Sung Woo (Korea University)	Lipid-mediated conformational equilibrium of gap junction intercellular channels
Speaker3	30' Jeong Min Chung (The Catholic University of Korea)	Unlocking the Secrets of Bacterial Infection: A Structural Study of Secretion Systems through Cryo-EM and Cryo-ET
Speaker4	30' Gyu Rie Lee (University of Washington)	The coming of age of atomic-level protein design: de novo design of small-molecule binding proteins using deep learning

S12 - Microbiome

May 30th(Thu) 09:00-11:00, Room 106~107

Organizer & Chair	Jin-Woo Bae (Kyung Hee University)	
Speaker1	30' Kiyoshi Takeda (Osaka University)	Host-microbiota interaction for the maintenance of intestinal homeostasis
Speaker2	30' Soon-Kyeong Kwon (Gyeongsang National University)	Features of gut microbiome of responders to acupuncture treatment in patients with atopic dermatitis
Speaker3	30' Ara Koh (POSTECH)	Microbial metabolites in systemic circulation: Inter-kingdom messengers
Speaker4	30' Ye-Ji Bang (Seoul Nation University)	Role of Intestinal Epithelium in Microbiota-Immune Interactions

S13 - Tumor Microenvironment

May 30th(Thu) 09:00-11:00, Room 201~202

Organizer & Chair	Sae-Ock Oh (Pusan National University)	
Speaker1	35' Nini Baryawno (Karolinska Institute)	The tumor microenvironment in the metastatic bone marrow niche
Speaker2	30' Sang-Jun Ha (Yonsei University)	Regulation of T cell immunity in tumor immune microenvironment
Speaker3	30' Hae-Ock Lee (The Catholic University of Korea)	Traversing from tumor cells to surroundings in the understanding of lung cancer
Speaker4	25' Dongjun Lee (Pusan National University)	Discovery of new regulators in hematopoietic stem cells and malignancies

S14 - Innovative Drug Developments

May 30th(Thu) 09:00-11:00, Room 203~204

Organizer & Chair Sang Won Kang (Ewha Womans University)

Speaker1	30'	Ji Yeon Kim (Yale University)	Bench to bedside, quality AND quantity of life: Cancer metabolism
Speaker2	20'	Ssang-Goo Cho (Konkuk University)	Stem cell-derived extracellular vesicles with high regenerative and immunomodulatory abilities
Speaker3	30'	Hyun Woo Park (Yonsei University)	Reprogramming anchorage plasticity of circulating tumor cells in metastasis
Speaker4	20'	Chang Hoon Lee (KRICT)	Adenosine Metabolism as Exploitation for Therapeutic Target in Cancer
Speaker5	20'	Weon-Kyoo You (ABL BIO)	Trends and strategies in the development of innovative antibody-based drugs: from discovery to clinical stage

S15 - Immune responses in the barrier and metabolic tissues

May 30th(Thu) 09:00-11:00, Room 205

Organizer & Chair Min Jae Lee (Seoul National University)

Chair Jin-A Lee (Hannam University)

Speaker1	23'	Hyun Kyu Song (Korea University)	Expanding the structural repertoire of the N-degron pathway
Speaker2	23'	Eun Joo Song (Ewha Womans University)	Regulation of Deubiquitinating Enzymes by Post-Translational Modifications
Speaker3	23'	Myung-Shik Lee (Soonchunhyang University)	Development of autophagy/lysosomal enhancer for clearance of amyloid in vivo and treatment of diabetes & Alzheimer's disease
Speaker4	23'	Hyun Jin Kim (Sungkyunkwan University)	Regulation of autophagy by the intracellular Ca ²⁺ channel TRPML3
Speaker5	28'	Shigeo Murata (University of Tokyo)	Dynamics and Role of Proteasomes in Cellular Senescence

S16 - Mechanisms of brain dysfunctions

May 31st(Fri) 13:00-15:00, Room 101~102

Organizer & Chair Jaewhan Song (Yonsei University)

Chair Jin Woo Kim (KAIST)

Speaker1	30'	Naoko Ohtani (Osaka Metropolitan University)	The roles and mechanisms of cellular senescence and SASP in the tumor microenvironment of steatosis-associated liver cancer
Speaker2	30'	Mei Tian (Fudan University)	Phenotypes and Multi-Omics Analysis of Aging: Unveiling the Secrets of Longevity and Health
Speaker3	25'	Dongryeol Ryu (GIST)	Gut microbiota-generated metabolites and healthy aging
Speaker4	25'	Chuna Kim (KRIBB)	Fibrotic Niche-enriched single-cell transcriptomics uncovers novel age-associated cell types
Speaker5	10'	Seungyeon Kim (Yonsei University)	Suppression of MKRN1 E3 ligase function activates liver AMPK leading to prevention of nonalcoholic steatohepatitis

S17 - Physiological roles and application of GPCRs

May 31st(Fri) 13:00-15:00, Room 106~107

Organizer & Chair JaeHyung Koo (DGIST)

Chair Byungheon Lee (Kyungpook National University)

Speaker1	35'	Seungkiri Ahn (Duke University)	A positive allosteric modulator of beta2-adrenergic receptor – from isolation to structural and pathophysiological characterization
Speaker2	25'	Youngmi Jung (Pusan National University)	Formyl peptide receptor 2 is an emerging regulator in the progression of liver disease
Speaker3	30'	Hee-Jung Choi (Seoul National University)	Molecular mechanisms of odorant binding and activation in the human OR52 family
Speaker4	30'	Hye Jin Kang (Yonsei University)	A Multiplexed GPCR Screening Platform that Sheds Light on New Biology

S18 - Extracellular matrix (ECM), fibrosis

May 31st(Fri) 13:00-15:00, Room 201~202

Organizer & Chair Jung Weon Lee (Seoul National University)

Speaker1	25'	Aree Moon (DukSung Women's University)	Roles of tumor microenvironment and autophagy in triple-negative breast cancer progression
Speaker2	25'	Chungho Kim (Korea University)	Biologics approaches to regulate platelet function
Speaker3	25'	Qing-jun Meng (University of Manchester)	Circadian regulation of extracellular matrix homeostasis in ageing and fibrosis
Speaker4	25'	Katsuto Tamai (Osaka University)	Development of tissue regeneration-inducing medicine
Speaker5	20'	Eun Hee Ahn (Hallym University)	Exploring Serum NTN4 and GAP-43 as Potential Biomarkers for Alzheimer's Disease Progression

S19 - Current New Development of CRISPR-Cas9 Technology

May 31st(Fri) 13:00-15:00, Room 203~204

Organizer & Chair Kyungjae Myung (UNIST)

Speaker1	40'	Michael Bassik (Stanford University)	Developing New Functional Genomics Tools to Investigate Tumor-Macrophage Interactions
Speaker2	25'	Kayeong Lim (KIST)	Precise Genome Engineering: from Nucleus to Mitochondria
Speaker3	25'	Yongsub Kim (University of Ulsan)	Precision genome engineering using CRISPR-mediated base and prime editors
Speaker4	25'	Seung Woo Cho (UNIST)	Efficient induction of cancer-specific cell death using multiplexed CRISPR-Cas9 targeting cancer-specific mutations

S20 - Precision Medicine

May 31st(Fri) 13:00-15:00, Room 205

Organizer & Chair Jong il Kim (Seoul National University)

Speaker1	40'	Paul Valdmánis (University of Washington)	Association between population-specific tandem repeat expansions and human disease
Speaker2	30'	Joon-Yong An (Korea University)	Identification of sex differences in autism using a large-scale whole genome sequencing analysis
Speaker3	30'	Sun-Wha Im (Kangwon National University)	A whole-genome reference panel of 14,393 individuals for East Asian populations accelerates discovery of rare functional variants
Short talk	10'	Yunjin Go (Ajou University School of Medicine)	HepScope: A Prognostic Gene Set for Classifying Hepatocellular Carcinoma with Neural Networks and Immune Landscape Analysis
Short talk	10'	Soyeon Kim (Sungkyunkwan University)	Mapping extrachromosomal DNA amplifications during cancer progression