

Workshop Category and Keywords

2023.05.29

No.	Category	Keywords
1	Hematopoiesis and Immune Environment	Hematopoietic stem cells Hematopoietic progenitors Lymphoid precursors Self-renewal Pluripotency Plasticity Lineages Commitment Cell fate decision Mesenchymal stem cells Osteoblasts CAR cells Niche Stromal cells Homing Bone marrow transplantation Cytokines/ Cytokine receptors Chemokine/ Chemokine receptors Receptors Signal transduction Bone marrow Lymph nodes Thymus Peyer's patches Chemotaxis Vascular endothelial cells Lymphatic endothelial cells Adhesion molecules Selectins Cadherins Integrins Lectins GPCR Sphingosin-1-P Cytoskeleton HEV In vivo imaging Cell Migration Extracellular matrix Thymic microenvironment Thymic medulla Promiscuous gene expression AIRE Notch/Delta Follicular dendritic cell (FDC) Fibroblastic reticular cell (FRC)
2	B cells	Early B cell development V(D)J recombination Clonal selection Central tolerance Repertoire B cell activation B cell receptor (BCR) Pre-BCR ITAM, ITIM Signal transduction Antigen-antibody interaction Adaptor protein Cytokines/ Cytokine receptors Chemokine/ Chemokine receptors Co-stimulation Inhibitory signals GEM/Lipid microdomain Co-receptor Transcription factors Plasma cells Complement receptor signaling

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2	B cells	APRIL BAFF Negative selection Class switch Somatic hypermutation Secondary lymphoid organ Germinal center Affinity maturation AID Long-lived plasma cells Memory B cell Receptor editing Regulatory B cell
3	T cells	Early T cell development V(D)J recombination b-selection Lineage commitment Positive/negative selection Repertoire selection & formation Central tolerance TEC Repertoire formation T cell activation T cell receptor (TCR) Pre-TCR Signal transduction Adaptor proteins Co-stimulation Inhibitory signals Cytokines/ Cytokine receptors Chemokine/ Chemokine receptors Transcription factors Thymus GEM/lipid raft MHC CD1 Non-classical MHC Adhesion molecules Anergy Homeostasis Homeostatic proliferation AICD Notch/Delta Immunological synapse Cytotoxic T cells Programmed cell death Gene regulation Immunological memory CD4 memory Central memory Effector memory CD8 memory Life-long memory Immune diseases Cell Migration Th1/Th2/Th17 Immune regulation tissue resident memory T cells Epigenetics Memory T cells Neuro-immune axis Immune-metabolism Gene expression Antigen presenting cells Cellular interaction T-B interaction Secondary lymphoid organ Plasticity

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4	Innate lymphocytes	NK cells NKT cells MAIT cells NK receptors Paired receptors NK cell target molecules ADCC Cytotoxic molecules Virus infection Bone marrow transplantation GvH CD1 Glycolipid Extrathymic differentiation gdT cells Cytokines/ Cytokine receptors RORgt ILC LTi Allergy Mucosal Immunology
5	Dendritic cells, macrophages, granulocytes	Differentiation Subsets Immune regulation Immunological tolerance MHC Phagocytes Antigen transfer Cell migration Cell circulation Th differentiation Interferon Lectins Toll-like receptor (TLR) Nod like receptor (NLR) Maturation/Activation Chemokine/ Chemokine receptors Cytokines/ Cytokine receptors Co-stimulation T cell activation Intercellular interaction Phagocytosis Recognition of non-self Regulatory dendritic cell Regulatory macrophage Antigen-presenting cell Antigen peptides Antigen processing Hsp Ubiquitination Cathepsin Autophagy Proteasome CD1 Non-classical MHC Cross-presentation Inflammasome Neutrophils Inflammation Differentiation Migration Apoptosis Differentiation pathway Tissue macrophage

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6	Allergy	Migration Differentiation pathway IgE receptor Differentiation Basophils Allergens Eosinophils IgE Protease Vaccine for allergy Mucosal Immunology Allergic conjunctivitis Th2 disease Cytokines/ Cytokine receptors Mast cells Activating and inhibitory signal transduction Airway inflammation IgE Mast cells Contact hypersensitivity Mucosal Immunology Bronchial asthma Innate lymphoid cells Th2 Atopic dermatitis Allergic disease Neuro-immune axis Itch
7	Cytokines and chemokines	Cytokines/ Cytokine receptors Chemokine/ Chemokine receptors Signal transduction Interleukin Interferon TNF family TGF- β family CSF NF-kb Immune regulation Immune diseases Jak/STAT SOCS IRF TRAF Smad Homing Cell Migration In vivo imaging Gene regulation
8	Tolerance and Immune suppression	Central Tolerance Peripheral tolerance Immune suppression Immune homeostasis Organ transplantation Transplantation immunology Bone marrow transplantation MHC GvH GvL Immunosuppressive agents Cytokines/ Cytokine receptors Autoimmunity Inflammation Feto-maternal interaction Anergy Receptor editing Cell death Treg Thymus-derived Treg

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8	Tolerance and Immune suppression	Peripherally-generated Treg Tr1 Regulatory CD8+ T cells Tolerogenic dendritic cells Foxp3 Transcription factors PD-1 ICOS-L TGF- β family IL-10 IL-2 Co-stimulation Dendritic cells IDO Recognition of apoptotic cells TNF-TNFR family CD28-B7 family CTLA4 ILC Immune checkpoint
9	Virus infection Bacterial / mycofungal / parasite infection	Virus Viral peptides DNA vaccine Virus-specific CTL Target cells Host defense mechanism CTL Immunological memory Maintenance of memory Life-long memory Central memory Effector memory Interferon Escape mechanism NK cells IRF3/7 TBK-1 Toll-like receptor (TLR) MyD88 NF-kb MAP kinase TRAF IRAK TIRAP TRIF/TICAM-1 RIG-I IPS-1 MDA5 Lgp2 Cell surface receptors Immune responses Immune regulation Cytokine induction Toxin Macrophages Th1/Th2 Dendritic cells Neutrophils Microbial immunoactivators Pathogen sensors Signaling molecules Effector cells Anti-microbial products Phagocytosis Autophagy Nod like receptor (NLR) Lectin receptors DNA sensor RNA sensor Adjuvant

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10	Innate immunity	Mannose receptor Lectin Complement Classical pathway Alternative pathway Protease Lipid Nucleic acid Uric acid Inflammatory mediators Apoptosis Necrosis Antigen presenting cells Adjuvant Immune response Immune regulation Caspase Cytokines/ Cytokine receptors Signal transduction Autophagy Organelle Intracellular trafficking Phagocytosis Inflammation Tissue damage Atherosclerosis Redox Reactive oxygen Nitric oxide IRF3/7 TBK-1 Toll-like receptor (TLR) Nod like receptor (NLR) MDA5 RIG-I STING cGAS DNase RNase MyD88 NF-kb MAP kinase TRIF/TICAM-1 MD-1/2 Recognition of apoptotic cells TNF HMGB-1 metabolic change inflammasome Interferon Chemokine Pyroptosis Macrophages Dendritic cells Neutrophils C-Type Lectin Receptor (CLR) neutrophil extracellular traps (NETs)
11	Mucosal-Skin Immunity	Commensal bacteria Gut-associated lymphoid tissues (GALT) Mucosa-associated lymphoid tissues (MALT) Bronchus-associated lymphoid tissues (BALT) Nasopharyngeal-associated lymphoid tissues (NALT) Peyer's patch Intraepithelial T lymphocytes Isolated lymphoid follicles (ILF) B-1(Ly-1)cells Oral tolerance Cytokines/ Cytokine receptors ILC1 ILC2

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11	Mucosal-Skin Immunity	ILC3 Th1/Th2/Th17 Treg Tr1 Epithelial cell M cells Dendritic cells Macrophages IgA Mucosal vaccine Mucosal adjuvant Homing Inflammatory bowel diseases Food allergy Upper respiratory allergy Mucin Skin immunity Atopic dermatitis Langerhans cell
12	Autoimmune diseases	Autoimmunity Inflammatory arthropathy Model animals Animal model of arthritis NOD mouse EAE Sjogren's syndrome PBC (Primary biliary cirrhosis) Multiple sclerosis (MS) Myasthenia gravis Crohn's disease Inflammatory bowel disease Autoimmune thyroiditis Pemphigus Type I diabetes Pernicious anemia Gene expression Cytokines/ Cytokine receptors Chemokine/ Chemokine receptors Adhesion molecules Co-stimulation Cellular interaction Synovial cells Osteoclasts Osteoblasts MMPs SLE Scleroderma Dermatomyositis/Polymyositis Angiitis/angitis Autoantigens Anti-phospholipid antibody syndrome Systemic rheumatic disease MPO-ANCA Disease-associated gene Biologics Regulatory T cells AIRE Autoantibody
13	Tumor immunity	Cancer Tumor microenvironment Tumor antigen Peptide vaccine Adjuvant Antigen processing Antigen presentation Immunogenicity Immunogenic cell death Immuno-surveillance Helper T cells CTL

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13	Tumor immunity	B cells Antibody NK cells NKT cells Dendritic cells Macrophages Chemokine/ Chemokine receptors Cytokines/ Cytokine receptors Regulatory T cells Myeloid-derived suppressor cells Immuno-evasion Checkpoint blockade Neoantigens Co-inhibitory molecules Co-stimulatory molecules Recombinant virus Immunotherapy Monoclonal antibodies Engineered antibodies Adoptive immunotherapy CAR-T cells Gene therapy Chemotherapy Radiotherapy Graft versus tumor effect Biomarkers iPS cell Metabolism DNA, RNA vaccine Effector cells
14	Human Immunology (Immunointervention)	Human immunity Cord blood lymphocyte Humanized mouse Disease-associated gene Immunodeficiency Autoinflammatory disease (Autoinflammatory syndrome) Stem cell transplantation Biologics Immunointervention Adjuvant Infection Tumor Organ transplantation Autoimmune disease iPS cell Regenerative medicine Immunopharmacogenomics Organoid