MIMIC-VI

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European Journal of Immunology Basic • Clinical • Translational

ACIBADEM UNIVERSITY

TURKISH SOCIETY OF IMMUNOLOGY

6th INTERNATIONAL MOLECULAR IMMUNOLOGY & IMMUNOGENETICS CONGRESS (MIMIC-VI)



April 28 - 30, 2025

ACIBADEM UNIVERSITY

ISTANBUL, TÜRKİYE

mimic2025.org

ABSTRACT BOOK

6th INTERNATIONAL MOLECULAR IMMUNOLOGY & IMMUNOGENETICS CONGRESS (MIMIC-VI)

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Mustafa Diken	Johannes Gutenberg University	DE

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SCIENTIFIC PROGRAM

MONDAY, APRIL 28th, 2025	
09:00 – 10:30	**REGISTRATION**
10:30 – 11:30	**OPENING CEREMONY** Opening Speeches by the Host and Organizers Moderators: **Tolga Sütlü, İhsan Gürsel**
11:30 – 12:30	**KEYNOTE LECTURE** Moderators: **Günnur Deniz, Barbaros Oral** Human T cells: differentiation, defense, and regulation **Federica Sallusto** *ETH Zurich, CH*
12:30 – 13:00	**CONGRESS PHOTO SHOOT (MAIN HALL STAGE)**
13:00 – 14:00	**LUNCH BREAK**
14:00 – 15:30	**IMMUNE RESPONSE TO INFECTION** Moderators: **Mayda Gürsel, Akif Turna**
14:00 – 14:30	Host-Plasmodium interactions: One step closer to malaria vaccines **Cevayir Çoban** *The University of Tokyo, JP*
14:30 – 15:00	Emerging Infections and Immunology **Önder Ergönül** Koç University, TR
15:00 – 15:15	**OP-01** Investigation of SARS-CoV-2 Nucleocapsid and Spike N501Y Variant-Specific IgG Subtypes in Convalescent Pediatric Patients from COVID-19 Using Multiplex Flow Cytometric Bead-Based Assay **Mehmet Karaçay** *Istanbul Technical University, TR*
15:15 – 15:30	**OP-02** Development and Evaluation of the Efficacy of a Novel Monoclonal Antibody Targeting CX3CR1 for Pain Relief in Pancreatic Cancer, Chronic and Acute Pancreatitis **Deniz Baybağ** *Acibadem University, TR*

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MONDAY, APRIL 28th, 2025	
15:30 – 16:00	**SATELLITE SYMPOSIUM** SARTORIUS From Concept to Cure: The Role of Platform Development in Cell Therapy **Érica A. Schulze**
16:00 – 16:30	**COFFEE BREAK**
16:30 – 18:30	**CANCER IMMUNOLOGY AND IMMUNOTHERAPY** Moderators: **Güneş Esendağlı, Ceren Çıracı**
16:30 – 17:00	Insights into NK cell cytotoxicity – how to select the best (serial) killer for cancer therapy? **Carsten Watzl** *Technical University Dortmund, DE*
17:00 – 17:30	mRNA based cancer therapeutics **Mustafa Diken** *Johannes Gutenberg University, DE*
17:30 – 18:00	Biological sex at the intersection of cancer-neuro-immune crosstalk **Defne Bayık** *University of Miami, USA*
18:00 – 18:15	**OP-3** End-to-end Vector and Process Development for Clinically Applicable CD19-targeted CAR-T Cell Production in Türkiye **Betül Çakıcı** *Acibadem University, TR*
18:15 – 18:30	**OP-4** Characterization of tumor-infiltrating CD66b+ monocyte subset discloses NF-kB-mediated differentiation **Hamdullah Yanık** *Hacettepe University, TR*
18:30 – 19:00	**COFFEE BREAK**
19:00 – 21:00	**TSI GENERAL ASSEMBLY MEETING**

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TUESDAY, APRIL 29th, 2025	
09:00 – 10:30	**IMMUNE SYSTEM IN HEALTH AND DISEASE** Moderators: **Arzu Aral, Batu Erman**
09:00 – 09:30	Unveiling the molecular basis of T cell malfunctions and disorders using quantitative interactomics **Bernard Malissen** *Centre d'Immunologie INSERM-CNRS, FR*
09:30 – 10:00	The intersection of innate and adaptive immunity in the lung: implications for chronic pulmonary insufficiency **Sidonia Fagarasan** *RIKEN, JP*
10:00 – 10:15	**OP-5** Asparagine availability controls germinal center B cell homeostasis **Yavuz F. Yazıcıoğlu** *University of Oxford, UK*
10:15 – 10:30	**OP-6** Investigating the tumor immune microenvironment through innovative data analysis interfaces **Atakan Ekiz** *İzmir Institute of Technology, TR*
10:30 – 11:00	**SATELLITE SYMPOSIUM** BD FACSDiscover™ A8, The First Spectral Cell Analyzer with Real-Time Imaging **Tim Schenkel**
11:00 – 11:30	**COFFEE BREAK**
11:30 – 13:00	**MOLECULAR MECHANISMS IN AUTOIMMUNITY** Moderators: **Güher Saruhan Direskeneli, Eda Tahir Turanlı**
11:30 – 12:00	Immunological memory – a roadblock to regeneration of tolerance in autoimmunity **Andreas Radbruch** *Charité – Universitätsmedizin Berlin, DE*
12:00 – 12:15	**OP-7** Innate lymphocyte activation and interferon-driven pathways in Behçet's disease skin lesions **Atay Vural** *Koç University, TR*
12:15 – 12:30	**OP-8** Phosphorylation of signaling molecules in peripheral and thymic B cells and responses to T follicular helper cell-related cytokines in myasthenia gravis **Cemre Aktaş** *Istanbul University, TR*
12:30 – 12:45	**OP-9** CD22 Defines a Core Follicular Regulatory T Cell Subset that Controls the Antibody Response **Fatma Betül Öktelik** *Istanbul University, TR*

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TUESDAY, APRIL 29th, 2025	
12:45 – 13:30	**BALLOON RELEASE EVENT IN CELEBRATION OF "DAY OF IMMUNOLOGY" & "WORLD PRIMARY IMMUNODEFICIENCY WEEK"**
13:30 – 14:30	**LUNCH BREAK**
14:30 – 16:30	**INBORN ERRORS OF IMMUNITY** Moderators: **Yıldız Camcıoğlu, Ahmet Özen**
14:30 – 15:00	Immunoregulatory Functions of DOCK/STAT Complexes **Talal Chatila** *Boston Children's Hospital, USA*
15:00 – 15:30	Targeted Therapies in Inborn Errors of Immunity **Elif Karakoç Aydıner** *Marmara University, TR*
15:30 – 16:00	Inborn errors of immunity research in Türkiye: Results from a specialized research center "Can Sucak Lab" **Baran Erman** *Hacettepe University, TR*
16:00 – 16:15	**OP-10** Therapeutic Use of Bone Marrow-Derived Tolerogenic Dendritic Cells Modified by Lentiviral Transduction in CIA Model **Gözde Arslan** *Bursa Uludağ University, TR*
16:15 – 16:30	**OP-11** B and T Lymphocyte Subgroups in Patients with Selective IgA Deficiency **Semra Demir** *Istanbul University, TR*
16:30 – 17:00	**COFFEE BREAK**
17:00 – 18:00	**DAY OF IMMUNOLOGY LECTURE** Moderator: **Günnur Deniz (EFIS President-elect)** The immunology of sickness metabolism caused by a viral infection **Bojan Polic** *EFIS President. University of Rijeka, HR*
18:00 – 20:00	**POSTER SESSION**

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WEDNESDAY, APRIL 30th, 2025	
09:00 – 10:30	**EXOSOMES AND THE IMMUNE SYSTEM** Moderators: **İhsan Gürsel, Sinem Öktem Okullu**
09:00 – 09:30	A fresh look at classic immunology through the perspective of extracellular vesicles **Edit Buzas** *Semmelweis University, HU*
09:30 – 10:00	Dendritic cell derived extracellular vesicles for immune therapy of cancer **Susanne Gabrielsson** *Karolinska Institutet, SE*
10:00 – 10:15	**OP-12** Leishmania infantum Extracellular Vesicles Mediate Protection from Visceral Leishmaniasis and Long-Term Cross Protection from Cutaneous Leishmaniasis **İsmail Cem Yılmaz** *İzmir Biomedicine and Genome Center, TR*
10:15 – 10:30	**OP-13** Immunological Profiling Following SARS-CoV-2 Vaccination **İrem Evcili** *İzmir Biomedicine and Genome Center, TR*
10:30 – 11:00	**SATELLITE SYMPOSIUM** Advice and Advancements for the Flow Cytometric Analysis and Sorting of Extracellular Vesicles **Owen Hughes**
11:00 – 11:30	**COFFEE BREAK**
11:30 – 13:00	**EMERGING TECHNOLOGIES IN IMMUNOLOGY** Moderators: **Tolga Sütlü, Uğur Sezerman**
11:30 – 12:00	**EMBO Young Investigator Lecture** Physics of cells as a measure of immune cell functional states **Erdinç Sezgin** *Karolinska Institutet, SE*
12:00 – 12:30	Tissue-resident memory T cells identified in the muscle of patients with myositis using single-cell RNA sequencing **Begüm Horuluoğlu** *Karolinska Institutet, SE*
12:30 – 12:45	**OP-14** Discovery of Tumor-Specific T Cell Receptors Through Single-Cell Sequencing of Tumor-Infiltrating Lymphocytes in Melanoma **Elif Çelik** *Acibadem University, TR*
12:45 – 13:00	**OP-15** Investigating alternative polyadenylation sites in tumor-associated macrophage differentiation at single-cell resolution **Ebru Kocakaya** *Ege University, TR*

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WEDNESDAY, APRIL 30th, 2025	
13:00 – 13:30	**SATELLITE SYMPOSIUM** Advancing Immunology with 10X Genomics: Single-Cell & Spatial Innovations **Bio Koen De Gelas**
13:30 – 14:30	**LUNCH BREAK**
14:30 – 16:30	**FUTURE VACCINES AND IMMUNOTHERAPIES** Moderators: **Ayça Sayı Yazgan, Selim Badur**
14:30 – 15:00	Chemical switch between A-B-Z form nucleic acids for the in situ Immunotherapy **Ken J. İshii** *The University of Tokyo, JP*
15:00 – 15:30	Advancing Cancer Immunotherapy: The Emerging Role of Engineered NK Cells. **Rafet Başar** *MD Anderson Cancer Center, USA*
15:30 – 16:00	Intercellular metabolic crosstalk as an immunotherapy target in brain tumors **Dennis Watson** *University of Miami, USA*
16:00 – 16:15	**OP-16** Enhancing the Breadth of Protection from Neisseria Meningitidis Infection via Bivalent OMV Vaccine **Zeynep Arzum** *İzmir Biomedicine and Genome Center, TR*
16:15 – 16:30	**OP-17** Production of nanobodies targeting IL-1R1 (interleukin-1 receptor type 1) **Gizem Çile** *Acibadem University, TR*
16:30 – 17:00	**COFFEE BREAK**
17:00 – 17:45	**IŞIL BERAT BARLAN AWARD CEREMONY** Moderators: **Günnur Deniz, Güher Saruhan Direskeneli**
17:45 – 18:30	**CLOSING CEREMONY**

Poster Presentation

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[PP-069]

Characterization of Exosomes Derived from Macrophages Infected with Brucella or Exposed to Inactivated Brucella and Investigation of Their Effect on Macrophage Polarization

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[3]Department of Immunology, Faculty of Medicine, Bursa Uludag University, Bursa, Türkiye.
[4]Department of Medical Microbiology Faculty of Medicine, Bursa Uludag University, Bursa, Türkiye.

Introduction: *Brucella* is a type of gram-negative bacteria responsible for the bacterial disease known as brucellosis. The formation of exosomes in cells can alter immune responses during infection. *Brucella* can hide itself in phagocytic cells. In our study, the macrophage polarization of monocyte/macrophage-derived exosomes exposed to *Brucella* bacteria and bacteria-derived outer membrane vesicles (OMVs) was examined.

Method: In our study, THP-1 cells (human monocytic cell line) were cultured separately with inactive *Brucella melitensis* and *Brucella abortus* for 48 hours. Exosomes were isolated from THP-1 cells treated with inactive *Brucella* species using the ultracentrifugation method (100,000xg +4°C). The concentrations of the exosomes were determined using BCA (Bicinchoninic Acid Assay). The isolation of OMVs from live *Brucella* species was conducted using a commercial isolation kit. THP-1 cells were infected with active *Brucella* species. The cells were treated with inactive *Brucella* species, *Brucella*-derived THP-1 exosomes, and bacteria-derived OMVs (each 20ug). After 48 hours of incubation under the conditions, the cells (CD80, CD86, HLA-DR, CD163, CD169, CD206) were analyzed using a flow cytometer.

RESULTS-Conclusion: In conclusion, an increase in CD80-CD86 levels was observed in cells infected with active *Brucella* species, exposed to inactive *Brucella*-derived THP-1 exosomes, and exposed to active *Brucella* OMVs. A statistically significant increase in CD169 levels of the cells was observed, with this increase being less pronounced in THP-1 cells treated with OMV compared to those treated with active *Brucella*species. It has been shown that exosome and OMV structures also exhibit a significant increase in surface markers; however, this increase is less pronounced compared to the increase directly induced by bacteria. ROS-NO levels of cells decreased at the same time.
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Keywords: Infectious diseases, *Brucella*, macrophage, THP-1 cell line

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