



23rd Biotechnology Congress with International Participation

Hacettepe University, Beytepe Campus

October
23-25
2025

Day 1 Thursday, October 23, 2025

- 10:00-10:30 Opening Ceremony and Speeches (*Mehmet Akif Ersoy Hall*)
 10:30-11:00 Opening Keynote (*Mehmet Akif Ersoy Hall*)
 PProf. Dr. Brad Day (*University of Tennessee, Knoxville (UTK), USA*)
Convergent Research: Tackling Grand Challenges Together

11:00-11:15 Coffee Break

- 11:15-12:45 Panel: Artificial Intelligence and Health Biotechnology (*Mehmet Akif Ersoy Hall*)
 Moderator: Prof. Dr. Anahita Khojandi (UTK)
 Invited Speakers:
- Prof. Dr. Glen Balch (UTK) / *The Digital Transformation of Medicine: How AI is Revolutionizing Healthcare Today and Tomorrow*
 - Prof. Dr. Emre Huri (Hacettepe University, Faculty of Medicine) *The Role of Technological Innovations in Treatment within the Digital and Robotic Era: Applications of 3D Modeling, Surgical Planning and Simulation*
 - Prof. Dr. Mustafa Sert (Başkent University) *Trustworthy AI for Personalized and Preventive Healthcare*
 - Prof. Dr. Tunca Doğan (Hacettepe University, Faculty of Engineering) / *Applications of Generative AI in Biotechnology and Biomedicine*

12:45-13:30 Lunch Break

Parallel Sessions I

13:30-14:30 Medical Biotechnology Session I (*Mehmet Akif Ersoy Hall*)

- Session Chair: Prof. Dr. Güneş Esendağlı (*Hacettepe University*)
 13:30-13:50 Invited Speaker: Bernard Kim (*Norgen Biotek*)
Unlocking True Sample Potential: Norgen's Unique Approach to Sample Prep
 Oral Presentations (10 min each):
- Molecular Mechanisms of ATRA in Skin Regeneration and Protein Quality Control/ Darya Farhoomand Aksoy*
 - Comparative Evaluation of Epithelial-Mesenchymal Transition in SW480 and SW620 Colorectal Cancer Cells under 2D and 3D Culture Conditions/ Sena Saka*
 - High-Yield Production of the Tuberculosis Virulence Factor ESAT-6 in Escherichia coli Burcu Saygıner*
 - Determination of Cytotoxic Effects of Chlorogenic Acid on Lung Cancer Cells Yunus Emre Cavlak*

13:30-14:30 Nanobiotechnology Session I (*K Hall*)

- Session Chair: Prof. Dr. Dilek Çökeliler Sendaroğlu (*Başkent University*)
 Oral Presentations (10 min each):
- Integration of MicroRNA and Mitochondrial Gene Networks in Alzheimer's and Parkinson's Diseases/ Yağmur Özendi*
 - Plant-Derived Nanovesicles: New Horizons in Tissue Repair, Anti-Aging, and Infection Control Selin Aşık*
 - pEV-Derived Nanoparticles: Innovative Solutions for Wound Repair and Anti-Aging in Biotechnology Zeynep Yasmin Bağdatlı*
 - Development and In Vitro Evaluation of Poloxamer-Coated Nanoparticles for Opsonization Mechanisms /Kübra Kılıç*
 - Lyotropic and Blue Phase Liquid Crystal Sensors for Selective Detection of Toxic Vapors Emine Kemiklioğlu*
 - Biocompatible and Organic-Based Multifunctional Nanoparticles: Brain-Targeting Strategies in the Treatment of Neurological Disorders /Burcu Ökmen Altaş*

14:30-15:30 Panel: Agricultural Biotechnology – Economy and Legal Framework (Mehmet Akif Ersoy Hall)

Moderator: Prof. Dr. Remziye Yılmaz (Hacettepe University)

Invited Speakers:

- **Michael Francom** (Regional Agricultural Counselor, USDA FAS, Ankara)
The Problems with the Biosafety Law and its Costs for US and Turkish businesses
- **Nermin Kahraman** (Policy Officer for Agriculture, Food Safety and Consumer Protection Delegation of the European Union to Türkiye)
European Union biotechnology policies and regulations
- **Prof. Dr. Hakan Yardımcı** (Ankara University)
Biosafety Law and Its Applications in Türkiye

15:30-15:45 Coffee Break

Parallel Sessions II

15:45-17:00 Agricultural Biotechnology Session I (Mehmet Akif Ersoy Hall)

Session Chair: Prof. Dr. Mehmet Cengiz Baloğlu (Kastamonu Üniversitesi)

15:45-16:15 Invited Speaker: Mustafa Çalık – (R&D Director, Sunar Investment)

Biotechnological Transformation of Agricultural Resources: Sunar Investment's Industrial Transition

Oral Presentations (10 min each):

- *Tracking the genome dynamics using endogenous pararetrovirus sequences in polyploid and diploid ancestors of Glycine species/ Ahmet L. Tek*
- *Evaluation of the Adaptation Ability and Antagonistic Activities of Local Trichoderma Isolates Under Salt Stress Conditions/ Burcu Atlı*
- *Intergenerational Effects of Sequential Cold and Heat Stresses in Rapeseed (Brassica napus L.)/ İrem Çağlı*
- *Epigenetic Regulation of Genes Involved in Seed Fatty Acid Synthesis After Heat Stress/ Mine Berrak Halik*

15:45-17:00 Industrial Biotechnology Session I (Hall K)

Session Chair: Prof. Dr. Ahmet Çabuk (Eskişehir Osmangazi University)**

15:45-16:15 Invited Speaker: Prof. Dr. M. Yekta Gökşungur Ege University/

Industrial Microbiology for a Sustainable and Healthy Future

Oral Presentations (10 min each):

- *Establishing a Culture Collection for Sustainable Industrial Biotechnology/ Nejat Furkan Çağlar*
- *Antioxidant and Proliferative Effects of Plant Stem Cells on Human Dermal Fibroblasts and Keratinocytes: Potential Anti-Aging Applications/ Aliye Ezgi Güleç Taşkıran*
- *Investigation of Biomass and Carotenoid Production Potential of Cereibacter sphaeroides PW15/ Caner Vural*
- *Determination of Amylase Production Potential of Bacillus megaterium A1/ Kübra İlkılıç*

Paralel Oturumlar III

17:00-18:00 Food Biotechnology Session I (Mehmet Akif Ersoy Hall)

Session Chair: Prof. Dr. Ömer Şimşek (Yıldız Technical University)**

Oral Presentations (10 min each):

- *Technological Properties and Secondary Metabolite Production of Genetically Diverse Penicillium roqueforti Isolates from Turkish Blue Cheeses/ Banu Metin*
- *Bioaroma Production Potential of Saccharomyces cerevisiae var. bouldardii S11 in Molasses Medium/ Furkan Demirgöl*
- *Ekşi Hamur Fermentasyonu için Saccharomyces cerevisiae PFC121 ile Farklı Laktik Asit Bakteri Kombinasyonlarının Seçimi/ Zühal Duman*
- *Atık Ekmekten Bakteriyel Selüloz Üretiminin Optimizasyonu/ Büşra Çetinkaya*
- *Saccharomyces cerevisiae Suşlarının Mikrobiyel Yağ Üretim Potansiyelinin Değerlendirilmesi/ Elif Bircan Muyanlı*
- *Identification and Characterization of Enterococcus spp. from White Cheese Facility and Their Fermentation in Whey Media/ Zeynep Görkem Cerit*

17:00-18:00 Environmental and Bioengineering Biotechnology Session I (Hall K)

Session Chair: Prof. Dr. Pınar Aytaç Çelik (Eskişehir Osmangazi University)**

Oral Presentations (10 min each):

- *Atmospheric and Vacuum Plasma Systems: Discharge-Based Biotechnological Applications*
Dilek Çökeliler Serdaroğlu
- *Development of a Three-Dimensional (3D) Human Gut Model on Decellularized Plant-Based Scaffolds*
Didem Perihan Esmer
- *Effect of Cold Plasma on Halomonas caseinilytica Biofilms/ Ethem Serhat Yavaş*
- *In Silico Comparison of Photosynthetic Mechanisms of Algae from Different Ecological Habitats/ Meltem Büyüktepe*
- *In Silico Analysis of Metabolic Pathway Differences Between Freshwater and Saltwater Algae/ Melisa Sıla Tombul*
- *In Vivo Evaluation of the Wound-Healing Efficacy of Levan-Based Biomaterials for Burn Treatment/ Özlem Erdal Altıntaş*

19:00-21:00 Gala Dinner (Registration Required)

- Venue: Beytepe Academic Cafeteria

GENERAL EVENTS

Digital Poster Presentations

In line with sustainability goals, the 23rd International Biotechnology Congress has adopted digital poster presentations to reduce paper consumption, protect natural resources, and minimize the carbon footprint. Posters will be viewable throughout October 23-25, 2025.

Scientific Illustration Mixed Exhibition (Beytepe Art Gallery)

23-25 Ekim 2025 (open during the congress)

Curated and produced by Prof. Dr. Banu Bulduk Türkmen (Hacettepe University, Faculty of Fine Arts, Department of Graphic Design), the exhibition is hosted at the Beytepe Art Gallery within the scope of the 23rd International Biotechnology Congress.

Day 2 Friday, October 24, 2025

10:00-10:30 Day 2 Opening Keynote (Mehmet Akif Ersoy Hall)

Prof. Dr. Anahita Khojandi (UTK, USA)

Human-Centered Precision Health: Harnessing AI and Sensing for the Future of Medicine

Parallel Sessions IV

10:30-11:30 Medical Biotechnology Session II (Mehmet Akif Ersoy Hall)

Session Chair: Prof. Dr. Özlem Darcansoy İşeri (Başkent University)**

Oral Presentations (10 min each):

- *Investigation of Cytotoxic and Gene-Regulatory Effects of Reserpine on Docetaxel-Resistant and Sensitive Breast Cancer Cells/ Buse Ceyda Öncel*
- *Targeted Mutation in the RpsS Gene of Escherichia coli K-12 Using the CRISPR-Cas9 System and Bioinformatic Evaluation/ Yaren Durusoy*
- *The Effects of hsa-miR-26a-5p on Cell Proliferation, Migration, and PI3K Inhibitor Sensitivity in Metformin-Resistant Triple Negative Breast Cancer Cells/ Şahika Cıngır Köker*
- *Evaluation of Antimicrobial and Antibiofilm Activity of Glycolic Acid-Levan Formulations in an Ex Vivo Root Canal Biofilm Model/Berfin Özer*
- *Effect of Platelet-Rich Fibrin Obtained from Nano-Titanium-Coated Tubes on Cell Viability and Apoptosis/ Ahmet Selçuk Alkaya*
- *Antimicrobial Efficacy of Glycolic, Phytic and Salicylic Acid Solutions on Enterococcus faecalis Biofilms in Endodontic Irrigation/ Berk Can Yücel*

10:30–11:30 Food Biotechnology Session II (Hall K)

Session Chair: Assoc. Prof. Dr. Ceyda Dudak Şeker (Hacettepe University)**

Oral Presentations (10 min each):

- *Recombinant Expression and Antimicrobial Potential of Autolytic Enzymes Derived from Listeria monocytogenes/ Dicle Dilara Akpınar*
- *The Role of Accreditation in Biotechnology Laboratories: Standards, Challenges and Non-Conformity Analysis/ Aslıhan Ünüvar*
- *Development and Characterization of Functional Bread Containing Synbiotic Microcapsules/ Dilan Barut Yavaş*
- *Determination of Potential GABA-Producing Psychobiotic Strains in Lactic Acid Bacteria via Thin-Layer Chromatography/ Elif Şeyma Bağdat*
- *Technological, Sensory and Microbiological Changes in Bread Enriched with Black Cumin Oil/ Seda Doğan*
- *From Tradition to Food Biotechnology: Bibliometric Analysis of Tempoyak, the Fermented Durian/ Arina Nabilah Binti Nizam*

15:30–15:45 Coffee Break

Parallel Sessions V

11:45–12:30 Nanobiotechnology Session II (Mehmet Akif Ersoy Hall)

Session Chair: Prof. Dr. Dilek Çökeliler Serdaroğlu (Başkent University)**

Oral Presentations (10 min each):

- *Advanced Microfluidic Engineering of Fluorescent Nanoparticles for Bioimaging and Biomedical Applications/ Atakan Tevlek*
- *NIR-Responsive Nanostructured Lipid Carriers Co-Delivering Chemosensitizer for MDR Breast Cancer Therapy/ Gökçe Dicle Kalaycıoğlu*

11:45–12:30 Animal Biotechnology Session I (Hall K)

Session Chair: Prof. Dr. Mehmet Cengiz Baloğlu (Kastamonu University)**

Oral Presentations (10 min each):

- *Investigation of the Genetic Basis of Brachygnathia Inferior Cases in Sheep/ Nursen Şentürk*
- *Volatile Organic Compound-Based Biosensor Potential of Rats: New Horizons in Early Diagnosis of Diseases/ Büşra Nisa Yılmaz*
- *Molecular and Immunoinformatic Characterization of a Velogenic Newcastle Disease Virus Strain from Türkiye/ Kübra Erdoğan-Göver*

12:30–13:30 Lunch Break

13:30–14:30 Invited Speakers Session I (Mehmet Akif Ersoy Hall)

Session Chair: Prof. Dr. Mehmet Cengiz Baloğlu (Kastamonu University)**

- *Dr. Denita Hadziabdic-Guerry (UTK, USA) /Omics for a Resilient Future: Harnessing Fungal Genetics, Forest Health, and Food Security*
- *Dr. Kamil Duman (TAGEM, Ministry of Agriculture and Forestry) / Host-Pathogen Interaction and Its Role in the Development of Disease-Resistant Crops and Crop Protection*

13:30–14:30 Flash Talk Session I (Beytepe Art Gallery)

Session Chair: Prof. Dr. Remziye Yılmaz (Hacettepe University)**

Selected poster authors will be invited by the Scientific Committee to present their work as Flash Talks (3-minute presentation + 2-minute Q&A).

14:30–15:30 Panel: Industrial Biotechnology – Tools and Solutions (Mehmet Akif Ersoy Hall)

Moderator: Prof. Dr. Anahita Khojandi (UTK, USA)**

Speakers:

- **Andreas Biewald** (GEA Group) – *Let it Spin: Revolution in Upstream Processing with GEA Kytero*
- **Dr. Ashok Vaseashta** (International Clean Water Institute, USA) – *Micro-Nanoplastics in Aquatic Environment: Health Impact and Mitigation Strategies*
- **Dr. Aslı Sirmacı** (Promega GmbH) – *Promega life sciences products*
- **Mustafa Tokat** (Deutsche DEVS GmbH) / *Artificial Intelligence (AI) Applications in health sciences*

15:30–15:45 Coffee Break

Parallel Sessions VI

15:45–17:00 Medical Biotechnology Session III (Mehmet Akif Ersoy Hall)

Session Chair: Prof. Dr. Güneş Esendağlı (Hacettepe University)**

Oral Presentations (10 min each):

- *Production of Hydrogels from Slaughterhouse Collagen, Keratin from Human Hair Waste, and Calcium Carbonate from Snail Shells/ Rümeyza Işıl Özdemir*
- *Phytochemical Composition and Biological Activity of Forest Rose Extracts Obtained by Various Extraction Methods/ Nurdan Tuğba İşcen*
- *Preservation of Urinary Extracellular Vesicles for Liquid Biopsy and AI-Based Cancer Tracking/ Ayşe Nisan Pehlivan*
- *Biopolymer-Based Approach in Endodontic Irrigation: Biocompatibility and Antimicrobial Activity of Glycolic Acid–Levan Formulations/ Deniz Doğan Bulut*
- *Investigation of the Cytotoxic Effects of Lupeol on Glioblastoma Cell Lines/ Simay Pulak*
- *Cytotoxic Effects of Proguanylin on Sensitive and Doxorubicin-Resistant MCF-7 Breast Adenocarcinoma Cells/ Berfin Doğa Koçkaya*

15:45–16:35 Industrial Biotechnology Session II (Hall K)

Session Chair: Prof. Dr. Nihal Aydoğan (Hacettepe University)**

Oral Presentations (10 min each):

- *Effects of Tarhana on Gut Ecosystem–Associated Metabolites in an In Vitro Model System/ Furkan Demiregöl*
- *Polyhydroxybutyrate (PHB) as a Biodegradable Fiber Material: Processing, Properties, and Application Potential in Textiles/ Aybige Akdağ Özkan*
- *Balancing the Mevalonate Pathway in Saccharomyces cerevisiae for Enhanced Taxadiene Biosynthesis/ Hülya Karaca Atsaros*
- *Genetically Controlled Autonomous Living Functional Biomaterial Synthesis/ Tolga Tarkan Ölmez*
- *Confocal Microscopic Analysis of Bacterial–Fungal Dual Biofilm Structure/ İlknur Dağ*
- *Antimicrobial Activity of ZnO Nanoparticles Biosynthesized by Rhodospseudomonas palustris RPA1 Against Staphylococcus aureus/ Caner Vural*

Day 3 Saturday, October 25, 2025

Parallel Sessions VII

10:00–11:15 Multidisciplinary Biotechnology Applications Session I (Mehmet Akif Ersoy Hall)

Session Chair: Dr. Serap Gedikli (Biotechnology Association of Türkiye)**

Oral Presentations (10 min each):

- *Evaluation of In Vitro/In Vivo Wound Healing Effects of Levan-Based Sponge Wound Dressings/ Dilan Barut Yavaş*
- *Investigation of the Pro-Inflammatory Effects of Platelet-Rich Fibrin Obtained from Nano-Hydroxyapatite-Coated Tubes/ İzzet Melih Gürkan*
- *Effects of Surface Functionalization of Zeolitic Imidazolate Frameworks (ZIF-8) on Cytotoxicity in Breast Cells /Funda Keteci*
- *Molecular phylogeny of Turkish Tanacetum (Asteraceae) species based on nuclear ribosomal DNA sequences/ Begüm Zeynep Hançerlioğulları*
- *Genetic Characterization of Economically Important “Çavuş Grape” Genotypes in Türkiye Using SSR Markers/ Funda Yılmaz Baydu*
- *Effect of Endoscopic Cold Plasma on Enterococcus faecalis and Streptococcus mutans Biofilms/ Ethem Serhat Yavaş*

- Optimizing culture to improve metabolic stability and proliferative capacity of bone marrow-derived mesenchymal stromal cells/ **Pelin Kılıç**

10:00-11:15 Medical Biotechnology Session IV (Hall K)

Session Chair: Prof. Dr. Özlem İşeri (Başkent University)**

Oral Presentations (10 min each):

- Production of Red Pigment by Microfungi and Determination of Its Bioactive Properties/ **Emine İrdem**
- Characterization of the Phosphomimic Mutant of Human Small Heat Shock Protein (HSP20) Binding to Amyloid β 1-42 by Docking and Molecular Dynamics/ **Şevval Elifnaz Köse**
- Impact of Nutrient Limitation on , P-Glycoprotein Expression, Lipid Droplet Accumulation and Chemoresponse in Colorectal Cancer Cells /**Elif Deniz**
- Efficient Production of CFP-10, a Tuberculosis Biomarker, in Escherichia coli/ **Muhammed Yusuf Yılmaz**
- Evaluation of Collagen Types in Human Dermal Fibroblasts and Keratinocytes: Antioxidant, Proliferative, and Wound Healing Properties /**Ipek Zeynep Durusu**
- A Human iPSC-Derived Blood-Brain Barrier-on-a-Chip Model for Studying Prion-Associated Dysfunction /**Nafisa Tanjia**
- Development of Next-Generation Root Canal Filling Material Using Sustainable BiopolymerS/ **Kübra İlkılıç**

11:15-11:25 Coffee Break

11:25-12:30 Flash Talk Session II (Beytepe Art Gallery)

Session Chair: Prof. Dr. Remziye Yılmaz (Hacettepe University)**

Selected poster authors will be invited by the Scientific Committee to give Flash Talk presentations (3 minutes + 2-minute Q&A).

12:30-13:30 Lunch and Refreshments

13.30-15.00 Panel – Young Researchers (Mehmet Akif Ersoy Hall)

Moderator: Prof. Dr. Füsün İnci Eyidoğan (Başkent University)**

Invited Speakers:

- Doç. Dr. Evrim Güneş Altuntaş (Biotechnology Institute, Ankara University)
- Dr. Öğr. Üyesi Emre Aksoy (Department of Biological Sciences, Middle East Technical University)
- Doç. Dr. Özge Kahraman İlkkan (Department of Food Processing, Kahramankazan Vocational School, Başkent University)
- Dr. Öğr. Üyesi Pelin Kılıç (Kök Hücre ve Yenileyici Tıp Ana Bilim Dalı Ankara Üniversitesi Kök Hücre Enstitüsü)

15.00-15.30 Closing Session

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