Multi-Omics in Personalized Medicine Workshop with International Collaboration

SAVE THE DATE

17 March 2025, Monday

Registration is free of charge and it is limited to 40 participants. First come will be served first.

REGISTER NOW!

Please send an e-mail to chondromics@gmail.com with your name and mobile phone number. Your registration status will be confirmed by 3 March 2025.

TÜSEB - Aziz Sancar Research Center

Yeni Bayındır, Mavi Göl Cad., No:5, 06270 Mamak/Ankara

This workshop is organized in the context of TÜBİTAK #223S509 Project (chondromics.org), EU COST CA21110 - Building an open European Network on OsteoArthritis Research (NetwOArk) (netwoark.eu) Action and the Mobility (mobility.net.tr) Project Proposal

NetwOArk
The European Network on OsteoArthritis

MObility

chondrOMICs

Multi-Omics in Personalized Medicine*
Workshop with International Collaboration

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17 March 2025 Monday
TÜSEB-Aziz Sancar Research Center, Ankara

08:30 - 09:30	Opening Remarks	
	Prof. Dr. Mustafa Çelebier Hacettepe Üniversitesi Eczacılık Fakültesi Analitik Kimya Ab.D.	
	Prof. Dr. Feza Korkusuz Hacettepe Üniversitesi, Tıp Fakültesi, Spor Hekimliği Ab.D.	
	Prof. Dr. Mehmet Cahit GÜRAN Hacettepe Üniversitesi Rektörü	
	Prof. Dr. Ümit KERVAN TÜSEB Başkanı	
09:30 - 10:30	Invited Lectures	
	Chair Prof. Dr. F. Duygu Özel Demiralp	
	Prof. Dr. Maria d. Mayan Santos University of Vigo, CINBIO	New Therapeutic Targets and Biomarkers for OA Management.
10:30 - 11:00	Break	
11:00 – 12:00	Session 2 Lectures Chairs: Prof. Dr. Feza Korkusuz, Prof. Dr. Mustafa Çelebier	
11:00 - 11:20	Prof. Dr. Ömür Çelikbıçak Hacettepe Üniversitesi Fen Fakültesi Kimya Bölümü Fizikokimya Ab.D.	Mass Spectrometry in biochemistry
11:20 – 11:40	Dr. Ozan Kaplan Hacettepe Üniversitesi Eczacılık Fakültesi Analitik Kimya Ab.D.	Diagnostic and Treatment Monitoring Methods with LC-MS based Metabolomics Approaches.
11:40 – 12:00	Dr. Sevilay Erdoğan Hacettepe Üniversitesi Eczacılık Fakültesi Analitik Kimya Ab.D.	The Process from GC-MS based Metabolomics Studies to Biosensors for Personalized Medicine Applications
12:00 – 13:00	Lunch	

13:00 – 13:20	Prof. Dr. Gürler Akpınar Kocaeli Üniversitesi Tıp Fakültesi Temel Tıp Bilimleri Tıbbi Biyoloji Ab.D.	Development of a Novel In Vitro Mitophagy Model using the Bacterial HOK Protein
13:20 – 13:40	Öğr. Gör. Dr. Serkan YAMAN TÜSEB Türkiye Biyoteknoloji Enstitüsü	Use of Multi-Omic Technologies to Develop Personalized CAR-T Cell Therapy: New Horizons in Personalized Immunotherapy.
13:40 – 14:00	Prof. Dr. Servet Özcan Erciyes Üniversitesi Fen Fakültesi Biyoloji Bölümü Moleküler Biyoloji Ab.D.	Proteomics Insights of Cellular Senescence.
14:00 – 14:20	Dr. Tunç TUNCEL TÜSEB Türkiye Biyoteknoloji Enstitüsü	Potential of Single Cell Transcriptome Sequencing in the Search for New Drug Targets for Mesothelioma.
14:20 – 15:00	Break	
15:00 – 16:40	Session 4. Lectures Chairs Prof. Dr. Servet Özcan, Prof. Dr. Gürler Akpınar	
15:00 – 15:20	Prof. Dr. Murat Kasap Kocaeli Üniversitesi Tıp Fakültesi Temel Tıp Bilimleri Tıbbi Biyoloji Ab.D.	Utilizing the Power of Biological Biotinylation to Investigate Membrane Proteomes of Breast Cancer Cell Lines
15:20 – 15:40	Dr. Serhat ALADAĞ Türkiye İlaç ve Tıbbi Cihaz Kurumu Analiz ve Kontrol Laboratuvarları Dairesi Başkanlığı	Synovial Joint Fluid Chromatography Outcomes in Osteoarthritis: Do Affinity Sorbents Improve the Outcome of Multi-Omics Studies?
15:40 – 16:00	Dr. Ayhan DEMİR TÜSEB Türkiye Biyoteknoloji Enstitüsü	Effects of Genomic Variations on Protein Folding: Geometrical Investigation of Interfaces in Three-Dimensional Protein-Ligand Interactions.
16:00 - 16:20	Dr. Adem ÖZLEYEN TÜSEB Türkiye Biyoteknoloji Enstitüsü	Peptidyl-Prolyl Cis-Trans Isomerase Pin1: From Cellular Functions to Multiple Omics Approaches
16:20 - 16:40	Prof. Dr. Andrea Tangherloni Bocconi University, Department of Computing Sciences	AI meets biology: can AI help us analyze multi-omics data?
16:40 - 17:00	Closing Remarks and Certificates	

Why Osteoarthritis (OA)?

There are currently symptomatic therapies for OA and no efficient cure to the disease.

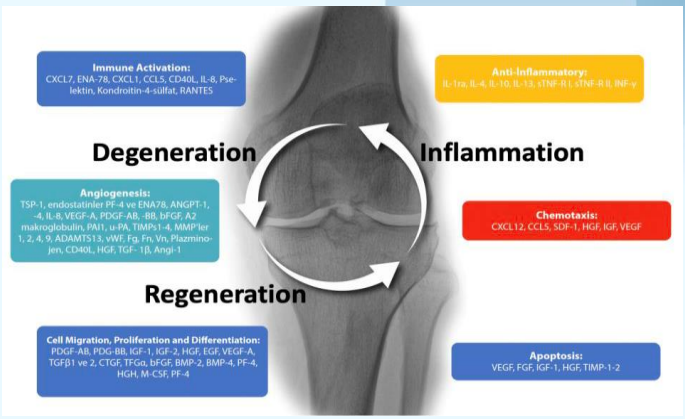
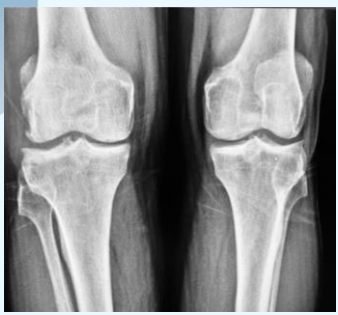


Figure. The intervening cascade of inflammation, degeneration and regeneration in osteoarthritis.

Early diagnosis of OA may lead to preventive measures of the disease and/or condition. The ultimate aim is to modify the natural course of the condition and slow down its development. Planning the treatment with the most appropriate approach and monitoring its success is equally important.

Current OA diagnostics heavily relies on patient history, physical examination and radiology. These methodologies have limitations as the progression of the disease and/or the success of the treatment cannot be adequately monitored with such methods.

Radiological findings and symptoms during physical examination may not always overlap with each other. These examination methods are also limited in the early diagnosis of OA.



Incidence of osteoarthritis (OA) has increased by 9% in the last 28 years. Prevalence of OA is reported to be 16.1% and it is more common in low- and middle-income countries.

It has been reported that 240 million individuals worldwide have symptomatic OA and this rate is especially higher in women over the age of 60. Knee joint OA was detected in 654.1 million people over the age of 40 in 2022 and its incidence was reported to be 203 per 10 thousand people.

There is a need to develop a reliable and economical biomarker-based approach that can provide rapid results at the bedside of the patient in order to diagnose OA as early as possible. Monitoring the success of treatments also seems to be essential. This issue was also addressed within the scope of the European Union's OActive project (https://www.oactive.eu/) in 2018 and was supported with a budget of nearly five million Euros.

In line with the aforementioned objectives, we have implemented a project to identify biomarkers associated with OA. The chondrOMICs project is granted by the Technological and Scientific Council of Türkiye (TÜBİTAK) under the EU COST Action "CA21110 - Building an open European Network on OsteoArthritis research (NetwOArk)" with the project number 223S509. Current project information is available at www.chondromics.org.

Project Title / 223S509: Development of a new Immobilized Metal Affinity Chromatography (IMAC) Sorbent for Phosphopeptide Enrichment for Monitoring the Diagnosis, Course, and Treatment of Osteoarthritis and Implementing the Omic Mapping of Synovial Fluid in Proteomic, Metabolomic and Lipidomic Studies

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