

TRANSCAN-3 JTC2021 International Networking Event



This project is co-financed by the
European Union and the Republic of Turkey
Bu proje Avrupa Birliği ve Türkiye Cumhuriyeti tarafından
finanse edilmektedir



Aim 1: Identification and validation of tumour microenvironment (TME) subclasses and their contribution to the resistance mechanisms

Aim 2: Targeting TME to improve efficacy of immunotherapy in human patients.

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Description of the Organization



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- **Audubon Bioscience** is an innovative provider of biospecimen solutions, services and related biomedical information of the highest quality.
- **Our goal** is a world where cancer is early detected and effectively treated.
- **We provide** biospecimen solutions and services to precision medicine researchers to support discovery of new life-saving diagnostics and treatments:
 - Wide variety of biospecimens (tissues, blood, biofluids, and cells)
 - Extensive clinical data & follow-up information
 - Various types of laboratory services (NGS, FISH, ICH, Flow cytometry)
 - Global network of partner clinics and research laboratories
 - Audubon's services quality promise and guarantee

Our Partners and Collaborators



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We have a network of 100+ partner clinical sites in USA, Europe, Asia and Africa, including:

Turkey:

Istinye University, Medical Oncology (Dr. Alper Can)

Medipol University, Medical Oncology (Dr. Ebru Karci)

Medipol University, Hematology (Dr. Omur Gokmen Sevindik)

Bezmialem University, Hematology (Dr. Guven Cetin)

Cemil Tascioglu Research training Hospital (Dr. Caglayan Geredeli)

Hungary:

Department of Clinical Oncology, Somogy Country Kaposi Mór Hospital, Pécs University (Dr. Somogyiné and Dr. Ezer Éva)

Békés Megyei Központi Kórház, Pándy Kálmán Tagkórház (Dr. Bassam Ali)

Romania:

Fundeni Clinical Institute, Marius Nasta Pneumophtisiology Institute

Countries that aren't listed in TRANSCAN:

Ukraine, Georgia, Nigeria, Ghana, Moldova, United States

Our Research Interests



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- Our goal is to combine our capacities with other research teams to develop new or improve existing **predictive liquid biopsy cancer biomarkers** using cell-free circulating tumour DNA and **prognostic biomarkers for immunotherapy** using PBMCs evaluation. We consider involving **AI models** to analyze the data, make predictions of outcomes and test their validity.
- We will support the research projects with patient enrollment, biosample collection, and analysis from our vast location network, **including underrepresented ethnic groups from developing countries**, diversifying the study cohorts. The latter is an important step for improving cancer screening and treatment, especially in the case of cancer immunotherapies, and taking into account that such groups particularly suffer from the lack of access to relevant cancer diagnostics and treatments.

Project Idea



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Aim 1: Identification and validation of tumour microenvironment (TME) subclasses and their contribution to the resistance mechanisms

Aim 1.3 Development of tools capable of predicting treatment efficacy and tumour recurrence using minimally- or noninvasive techniques. Development of robust noninvasive biomarkers of disease course.

Plasma cfDNA parameters as a potential predictive cancer biomarker, a population-based approach.

Objective:

- To use cell free DNA (cfDNA) isolated from plasma as a potential predictive tumor biomarker to provide insight into cancer progression pre- and post-treatment, and identification of any residual cancer cells

Expected results:

- We expect to see different parameters of the cfDNA in patients before and after cancer treatment
- We expect to see correlation between the cfDNA parameters and expression levels of the known tumor biomarkers.

Project Idea



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Aim 2: Targeting TME to improve efficacy of immunotherapy in human patients.

Aim 2.2 Evaluation in translational studies of the impact of TME on treatment efficacy and patient outcome.

Liquid biopsy prognostic biomarkers for cancer immunotherapy outcomes, a population-based approach

Objectives:

- To determine the changes in expression of the immune biomarkers found on PBMCs of cancer patients undergoing tumor immunotherapy (different cohorts/populations).
- To propose new prognostic biomarkers for immunotherapy of cancer patients.
- To train and test an AI model to predict immunotherapy outcomes using collected data and observed real-time scenarios and outcomes

Expected results:

- We expect to identify the expression dynamics of the immune biomarkers upon immunotherapy progression.
- We expect to see a different immune biomarkers expression based on population variability.
- We expect to show that by using PBMCs expression analysis we can establish a reliable non-invasive method to predict immunotherapy responsiveness for cancer patients.⁶

Consortium - profile of known partners



No	Partner Name	Type	Country	Role in the Project
01	Turkey research group	RTD	Turkey	Enrollment of relevant patients, collection and processing of biosamples, gathering biomedical data (including follow-up), performing necessary laboratory testing and processing, including: cfDNA isolation from plasma, PBMC isolation from plasma, analysis of the cfDNA using rt-PCR, flow cytometry, etc
02	Romania research group	RTD	Romania	
03	Hungary research group	RTD	Hungary	
04	Ukraine research group	RTD	Ukraine	
05	Audubon Bioinformatics	SME		Applying AI models
06		INFRA		

Consortium - required partners



No	Expertise	Type	Country	Role in the project
01	Basic research consultant	RTD		Senior experts in research related to TME, immunology, liquid biopsy, gene expression analysis
02	Translational research consultant	RTD		Specialized notion on novel cancer biomarker research
03	Bioinformatician	INFRA		To perform sequencing data analysis, flow cytometry data analysis, gene expression data analysis
04	AI experts			
05				
06				



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