

# NATIONAL CARDIOVASCULAR LABORATORY

## SCIENCE AND INNOVATION FOR OUR HEALTHY FUTURE

With a brand new revolutionary approach, the National Cardiovascular Laboratory aims to explore the pathophysiological mechanism responsible for age-associated cardiovascular disease in order to develop innovative tools for the diagnosis, prevention and therapy of such diseases.



## MAIN RESEARCH AREAS

- Clinical-epidemiological programs for the study of ischemic heart disease and heart failure
- Elucidate the potential medium- and long-term cardiovascular consequences of COVID-19 infection
- Innovative drug and biotechnology developments
- New drug targets and repositioning of existing drugs
- The development of in vitro cardiovascular platforms based on human induced pluripotent stem cells
- Innovative medical and diagnostic tools and databases
- Biomarkers and measurement methods for extracellular vesicle-based diagnostic and therapeutic approaches

### CONSORTIUM LEADER

Semmelweis University

### CONSORTIUM PARTNERS

Neumann Medical Ltd.  
Pharmahungary 2000 Ltd.  
University of Szeged  
3DHISTECH Ltd.

**PROJECT NUMBER:** RRF-2.3.1-21-2022-00003

**FUNDING PERIOD:** 01.03.2022 - 28.02.2026

**OVERALL BUDGET:** 5.670.176.720 HUF

## **BENEFITS TO BE EXPECTED FROM LABORATORY RESEARCH**

The research results of the National Cardiovascular Laboratory will represent a decisive contribution to the development of evidence-based cardiovascular health promotion and disease prevention programs, helping to achieve the goal of living a longer and healthy life for the population of the country. The interdisciplinary and translational nature of the program ensures that it successfully implements the development of evidence-based innovative disease prevention, screening, diagnostic and therapeutic procedures to reduce the incidence and mortality of cardiovascular diseases and supports their translation into medical and public health practice. The results of the program contribute to the access to international markets for innovative high economic value-added products and services, thus helping the development of the domestic pharmaceutical biotechnology industry.

## **THE PROFESSIONAL TEAM**

### **The leader of the project is Béla Merkely, MD, PhD. Professor**

rector of Semmelweis University, director of Heart and Vascular Center of Városmajor, professor and head of department at Department of Cardiology – Center of Cardiology and Sportcardiology and leader of the Vascular Neurology Department Group. His field of expertise includes: internal medicine, cardiology, sportcardiology.

He is a member of almost all major national and international scientific societies in the fields of cardiology, arrhythmia and pacemaker, interventional cardiology and circulation research.

He has held several senior positions including vice-president of the European Society of Cardiology and he is currently a board member of the Interventional Cardiology Working Group, the honorary and permanent honorary chairman of the Society of Hungarian Cardiologists and the Arrhythmia and Pacemaker Working Group.

From 2016, he is the European President of the China and Central-Eastern Europe Hospital Cooperation Alliance.

### **Experimental cardiology working group - Tamás Radovics, MD, PhD**

Professor, deputy scientific director at the Department of Cardiology at Heart and Vascular Center of Városmajor and one of the leading scientists of the experimental cardiology research.

Cardiovascular Epidemiology Research Group: Zsolt Bagyura, MD, PhD: research fellow at Heart and Vascular Center of Városmajor, has a leading role in Budakalász Epidemiological Study.

### **Cardiovascular and Metabolic Research Group – Péter Ferdinandy, MD, PhD, professor**

Doctor of Science (DSc), vice rector for science and innovation of Semmelweis University, director of Department of Pharmacology and Pharmacotherapy, president of Hungarian Society for Experimental and Clinical Pharmacology, member of the Council on Basic Cardiovascular Science in the framework of European Society of Cardiology, former president of International Society of Heart Research – European Section.

### **Cardiovascular and Metabolic in vitro Cell Culture Research Group – Anikó Görbe MD, PhD**

associate professor at Semmelweis University - Department of Pharmacology and Pharmacotherapy with more than 15 years of experience in ischemia/reperfusion studies regarding cardiac muscle cells, including cardiac muscle cells differentiated from stem cells. She also works as the head of the lab at the Cell culture and cell sorting core facility.

**Zoltán Ungvári**, PhD, Professor, director of the Department of Public Health, leader of the Gerontology Program, editor-in-chief and co-editor of the following international journals: GeroScience, Journal of Gerontology and American Journal of Physiology-Heart and Circulatory Physiology, board member at the American Aging Association and internationally acclaimed expert on aging-related cardiovascular diseases.

**Edit Buzás**, PhD, Professor, Corresponding Member of the Hungarian Academic of Sciences, head of the Department of Genetics, Cell- and Immunobiology, holder of the prestigious Széchenyi Prize.

## TARGET GROUP

The workporgram of National Cardiovascular Laboratory wishes to reach researchers with a devotion to not just create but also utilize their scientific results and who strive to develop intra-sector and cross-sector research collaborations in order to enhance innovation performance and increase the competitiveness of the economy.

The National Cardiovascular Laboratory indirectly aims to reach citizens longing to join the higher education-vocational training and adult education system with the aim of becoming competitive and high-quality professionals through the practical utilization of scientific results.

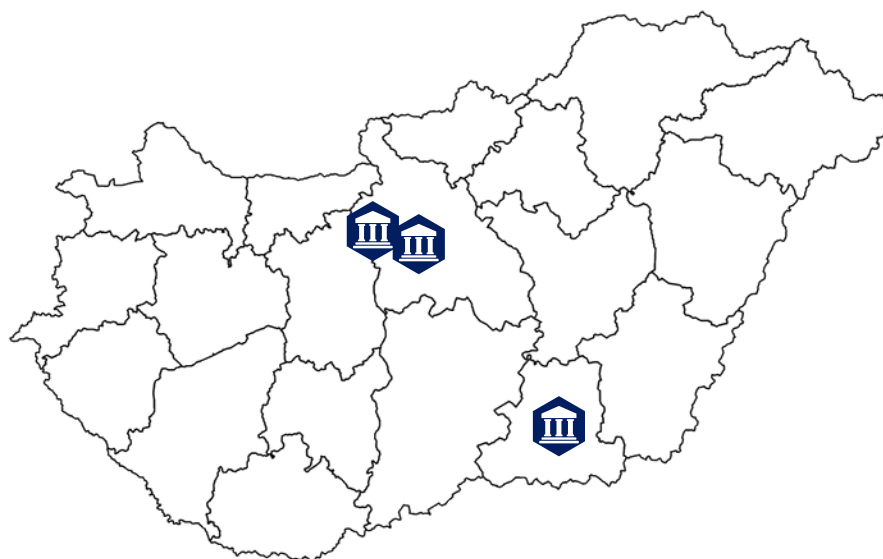
## POSSIBLE PARTNERSHIPS

The Healthy Aging Program aims to become the leading gerontology research of Central Europe that can join as equal the EU-funded innovative research and public health programs and also aims to enable the domestic adaption of good practices along with the international dissemination of the results acquired within the framework of the project.

In order to achieve these designated goals, research cooperation will be established with leading European scientific workshops. We are planning the translational, clinical and public health utilization of the developed 'anti-aging' interventions. Regarding the national and international extension the project, the involvement of universities from the Hungarian countryside and the widening of the project to other countries of the Pannonian Basin are high priority objectives of the National Cardiovascular Laboratory.

## PLACES OF IMPLEMENTATION:

- Budapest
- Herceghalom
- Szeged



| PROFESSIONAL CONTACT  |   |
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