
Silesian Park of Medical Technology

Kardio-Med Silesia

**Research Center for New Technology and
Innovations in Medicine and BioTechnology**



The Silesian Park of Medical Technology Kardio-Med Silesia (KMS) is a modern research and development center that meets the highest European standards and has been put into operation in September 2015.

As part of the infrastructure of the Silesian Park of Medical Technology Kardio-Med Silesia, we have created space and favorable conditions for the development of science and innovative technologies, supporting new initiatives serving the growth of entrepreneurship in the region and the country. For the implementation of these activities, the following task forces were established in the Silesian KMS Park: Center for Development of Medical Technology, Laboratory of Regenerative Medicine and Isolated Tissues and Organ, Genomics Laboratory, Tissues and Cells Bank in the GMP standard, Test and Implementation Laboratory for New Technologies and Medical Solutions, Laboratory of Environmental and Civilization Hazards, Laboratory of Isolated Organ, Laboratory and Telemedicine Center and KMS Outpatient Unit. It is possible to carry out preclinical and clinical research in the areas of: cardiology, interventional cardiology, cardiosurgery, oncology, neurology, diabetology, geriatrics and the area of environmental and civilization diseases in the KMS infrastructure.



SILESIA PARK OF MEDICAL
TECHNOLOGY KMS

SILESIA CENTER FOR HEART DISEASES
BUILDING „A”

SILESIA CENTER FOR HEART DISEASES
BUILDING „B”



Medical University of Silesia - Faculty of
Medicine in Zabrze (800 m); Cancer Centre in
Gliwice (15 min by car)

SILESIA CENTER FOR HEART DISEASES
BUILDING „C”

Level -1: operating theater and the experimental part with the possibility to perform treatments and trainings for small and large animal models;

Level 0: Counseling Unit; Clinical Research and Administration offices;

Levels 1 and Level 2: Laboratories including Cell and Tissue Bank, Telemedicine Centre and seminar rooms for up to 50 participants.





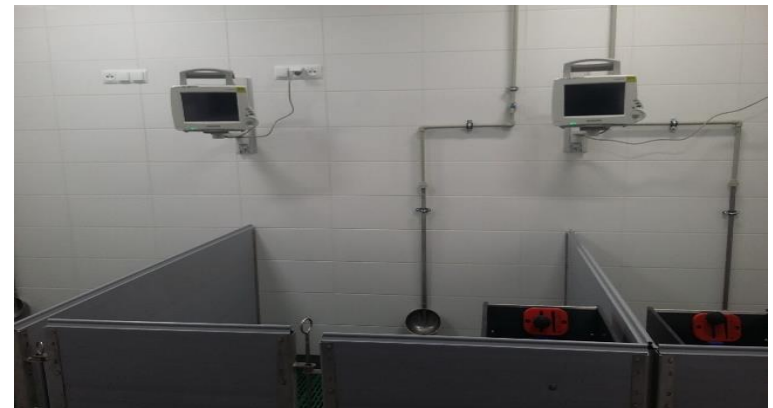
The KMS animal farm is equipped with IVC unit system - individually ventilated cages equipped with HEPA filters, placed on shelves. All installations in the animal's premises are integrated with the BMS (Building Management System), which is designed to control and monitor the correct operation of the installation through continuous monitoring of environmental and technical parameters in the premises.





Operating theater and the experimental part with the possibility to perform treatments and trainings for small and large animal models (pigs and sheeps).

BMS system All (Building Management System) designed to monitor the correct functioning of the installation by continuous monitoring of the environment and technical parameters.

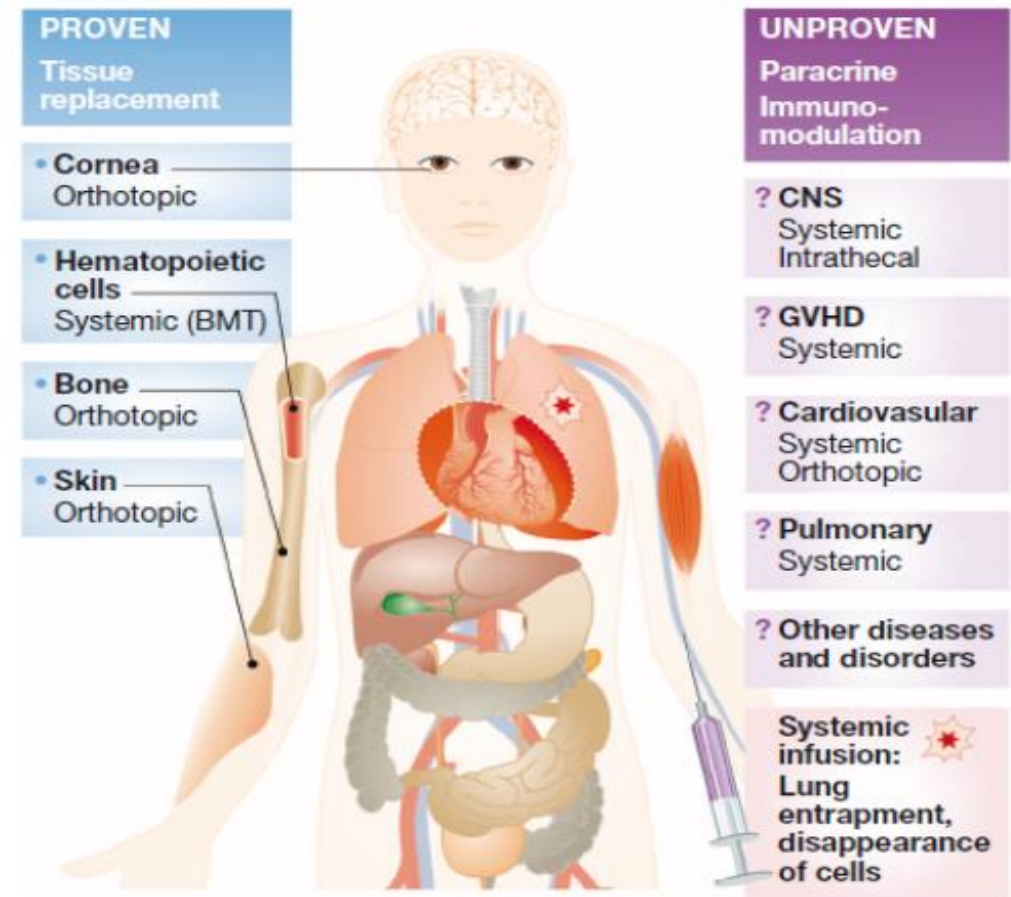
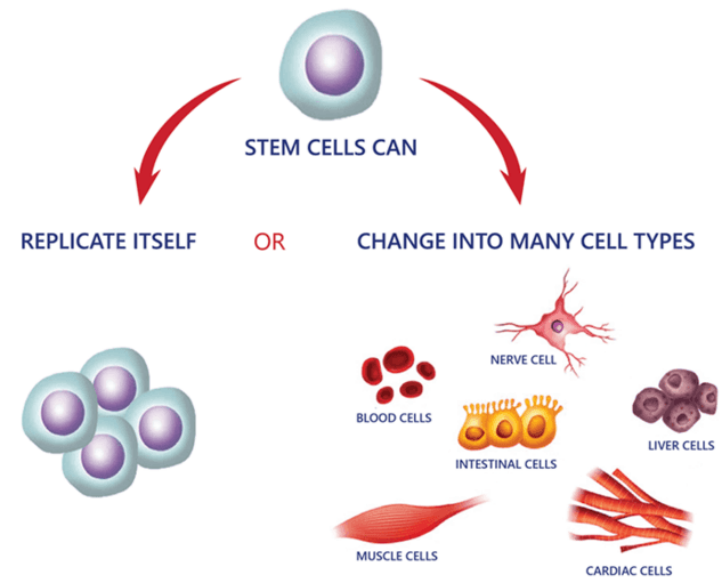




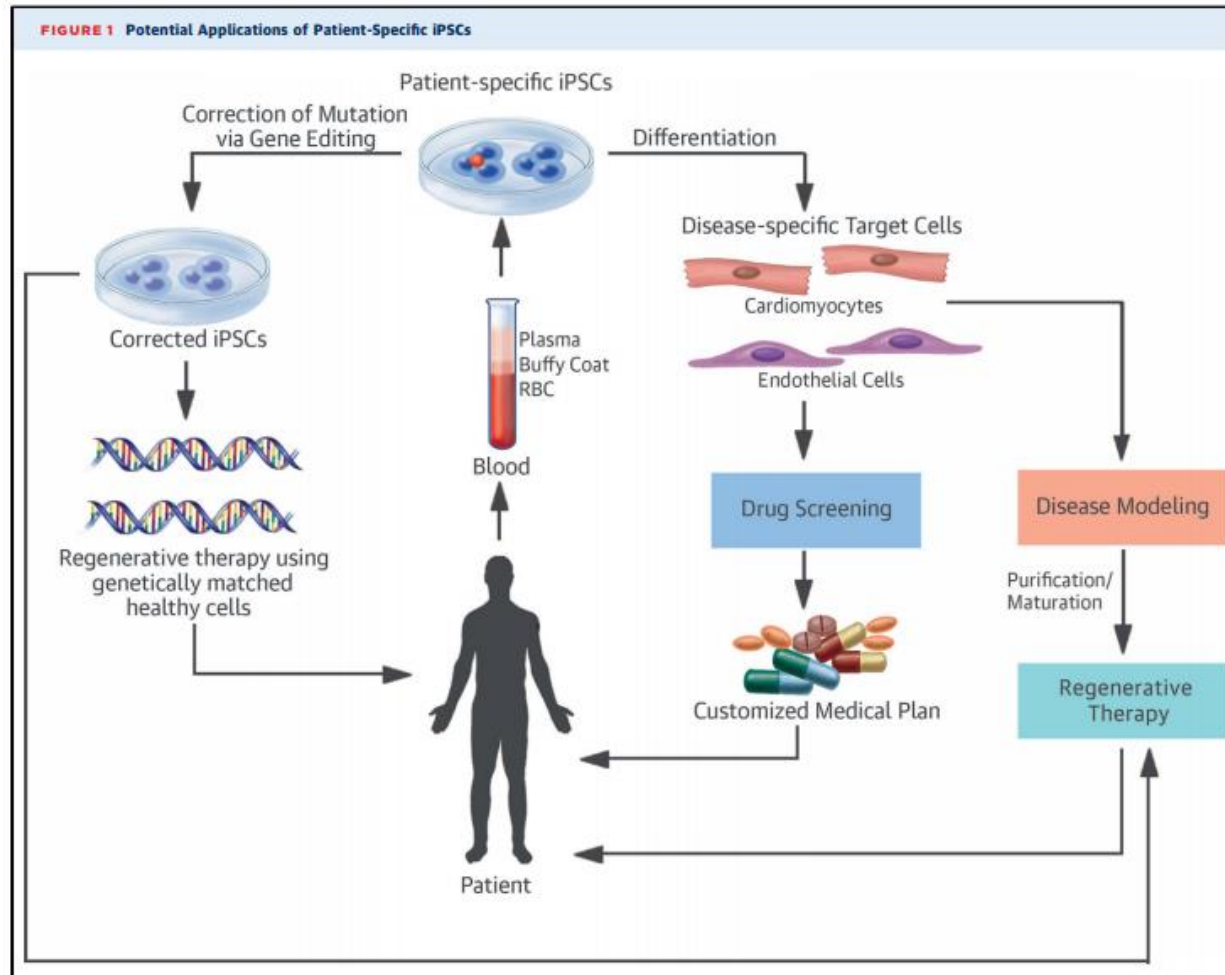
Tissues and Cells Bank in the GMP Standard

Stem cells in

Kardio-Med Silesia



Use of Induced Pluripotent Stem Cells





Genome Laboratory in

Silesian Park of Medical Technology Kardio-Med Silesia



GENETIC TESTS

- **Congenital thrombophilia:** indication of mutation *97G>A (20210G>A) in *F2* gene and in mutation p.Arg534Gln (factor V Leiden) in *F5* gene
- **Warfarin sensitivity testing:** indication of mutation 1639G>A in *VKORC1* gene and variants*2 and*3 of *CYP2C9* gene
- **Congenital thrombophilia:** indication of mutation *MTHFR* gene
- **Clopidogrel sensitivity testing**
- **Genetic background of cholesterol and lipid disorders:** apolipoprotein E (ApoE) genotyping
- **Gilbert's syndrome:** detection of dinucleotide repetitions (TA)_n in the promoter region of *UGT1A1* gene

Scientific projects at Kardio-Med Silesia

Silesian Park of Medical Technology Kardio-Med Silesia carry out 15 scientific projects funded by: Minister of Health, MNiSW; NCN, NBCIR, Horizon 2020; Silesian Voivodeship

Projects obtained in 2019 in the area of iPSC:



OPUS 13

Title: Mechanisms of cardiovascular complications in rheumatoid arthritis patients: induced pluripotent stem cell-derived cardiomyocytes as an experimental model



SONATA-BIS 8

Title: Mechanistic links between psoriasis and cardiovascular complications: investigation on inflammation induced alterations in induced pluripotent stem cells-derived endothelial cells, cardiomyocytes and cardiac organoids



HORIZON 2020 - Programme for Research and Innovation



Title: Cardiovascular complications in rheumatoid arthritis patients: induced pluripotent stem cell-derived cardiomyocytes as an experimental model



Kardio - Med Silesia organizes the annual cyclic meeting dedicated to novel technologies in health care (www.medtrends.pl)

"MedTrends – European Modern Health Care Forum" is a conference whose attendants are leading experts representing fields of cardiology, cardiac surgery, diabetes, neurology, and genomics who aim to exchange knowledge and experience concerning research and development of modern solutions in medicine between various representatives of science, medicine, new technology and telemedicine solutions as well as Polish, British and European businesses. The conference focuses on **personalised medicine, e-Health tools, 3D print and e-education in medicine.**

Additionally, innovatory medical **start-ups** have a chance to present their ideas to a range of leading figures from the world of medicine, investment societies and business experts during "**TOP-TRENDS**" competition.

The fifth edition of the MedTrends 2019 conference will be held in 5 December 2019.

More information on the conference website: www.medtrends.pl



Publications of

Silesian Park of Medical Technology Kardio-Med Silesia



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Thank you for your attention

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