Speakers and chairpersons
(in alphabetical order)

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Centro de Investigación Biomédica en Red en Enfermedades Cardiovasculares (CIBERCV), University Hospital Gregorio Maranon, Madrid, Spain

Christoph Dieterich
Klaus-Tschira-Institute for Computational Cardiology, Heidelberg University Hospital, Heidelberg, Germany

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University Hospital Erlangen,
Department of Nephropathology, Erlangen, Germany

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Vienna University of Technology, Vienna, Austria

Bernd Fleischmann
Institute for Physiology I, Life & Brain Center,
University of Bonn, Bonn, Germany

Egbert Flory
Paul-Ehrlich-Institute, Federal Institute for Vaccines and Biomedicines, Langen, Germany

Marie-José Goumans
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Felipe Prósper
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Pamplona, Navarra, Spain

Wilhelm Röll
Clinic und Polyclinic for Cardiac Surgery,
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Tomo Šarić
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University of Cologne, Cologne, Germany

Joost P. G. Sluijter
University Medical Center Utrecht,
Regenerative Medicine Center,
Utrecht, The Netherlands

Wolfram-Hubertus Zimmermann
Pharmacology and Toxicology,
University Medical Center Göttingen,
Göttingen, Germany

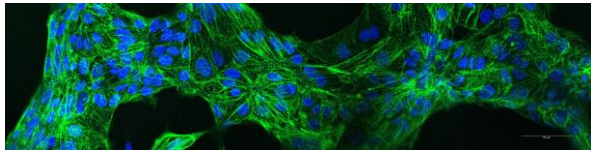
UNIKLINIK KÖLN

Fritz Thyssen Stiftung
für Wissenschaftsförderung

2nd Cologne Conference on

Cardiac Regeneration and Cell Therapy

September 26-27, 2019
Cologne, Germany



Scientific Coordinators:

Kurt Pfannkuche Tomo Šarić

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Dear Colleagues and Friends,

Welcome to the 2nd Cologne Conference on Cardiac Regeneration and Cell Therapy. Heart failure and underlying diseases are the most frequent cause of death in adults worldwide. In recent years, cell-based and cell-free regenerative approaches have been extensively explored as a promising alternative to existing pharmacological and surgical therapies for these conditions. Different types of stem cells of adult and embryonic origin as well as derivatives of pluripotent stem cells have been tested in animal models alone or in combinations as candidates for cardiac repair. Many of these approaches have also been tested in clinical trials. Among cell-free therapeutic products, biomaterials and extracellular vesicles secreted by progenitor cells are also being explored as safer alternatives for cardiac repair. These new cell-free products alone or in combination with cellular therapeutics are now being tested in animal models but have not yet been applied in humans.

Although it is generally accepted that the injection of various cell types or cell-free reagents into the site of tissue injury may exert therapeutic effects, very few regenerative approaches have either proved their efficacy in humans or significantly outperformed standard pharmacological or surgical treatments. Therefore, further research and collaboration across disciplines is necessary to advance the field.

The purpose of this conference is to bring together basic scientists, regulatory experts and clinicians with different backgrounds and expertise in order to exchange ideas and discuss new developments in this important research area. We hope that you will benefit from this conference and wish you a pleasant stay in Cologne.

Yours sincerely,

Tomo Šarić Kurt Pfannkuche

Thursday, September 26th, 2019

09:15 – 9:30 Welcome address
M. Paulsson, *Associate Dean (Research) of the Medical Faculty*
T. Šarić, K. Pfannkuche, *Symposium organizers*

Session 1: Keynotes
Chairs: K. Pfannkuche and W. Röll

09:30 – 10:00 Jürgen Hescheler
Stem cells for basic research and regenerative medicine

10:00 – 10:45 Gabriele Pfitzer
Lessons from mice and men: How biomechanical properties of the sarcomere determine heart function in health and disease

Coffee Break and Networking 10:45 - 11:15

Session 2: Cell-Based Therapies
Chairs: F. Prósper and B. Fleischmann

11:15 – 11:45 Bernd Fleischmann
Plasticity in the neonatal and adult heart

11:45 – 12:15 Hossein Baharvand
Pluripotent stem cell-derived cardiac progenitors: A platform for synthetic developmental biology of the human heart

12:15 – 12:35 Early-stage researcher: Sarkawt Hamad
Differentiation of human iPSC-derived cardiomyocytes

12:35 – 12:55 Early-stage researcher: Stephanie Pieroth
Hydrogel spheroids as a new substrate for bioreactor culture

Lunch Break 13:00 - 14:00

Company presentations

14:00 – 14:15 Product presentation
I&L Biosystems GmbH

14:15 – 14:30 Product presentation
Nippon Genetics Europe

14:30 – 14:45 Product presentation
Miltenyi Biotec GmbH

Session 3: Endogenous Heart Regeneration
Chairs: H. Baharvand and V. Khlebnikov

14:45 – 15:15 Felipe Prósper
Identification of mechanisms of cardiac repair using single cell transcriptomics of cardiac fibroblasts after myocardial infarction

15:15 – 15:45 Wilhelm Röll
Prevention of post-infarct arrhythmia by overexpression of connexin 43 within the murine myocardial scar

Coffee Break and Networking 15:45 - 16:15

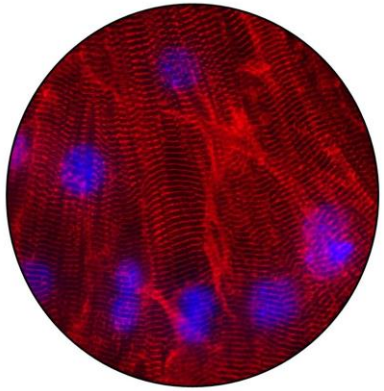
Session 4: Cell-free Heart Regeneration
Chairs: L. Kurian and A. M. Climent

16:15 – 16:45 Joost P. G. Sluijter
Advancing myocardial repair, do we need the cells?

16:45 – 17:15 Marie-José Goumans
Epicardial derived signaling and exosomes to stimulated endogenous cardiac repair

17:15 – 17:30 Early-stage researcher presentation
Title pending

17:30– 19:00 Poster session and networking



Friday, September 27th, 2019

Session 5: Organization, regulation and modelling
Chairs: J. P. G. Sluijter and C. Dieterich

09:30 – 10:00 Andreu M. Climent
A global framework of the cardiovascular regenerative medicine: The TACTICs / CARE effort

10:00 – 10:30 Egbert Flory
Development and regulatory aspects of ATMPs

10:30 – 11:00 Peter Erlt
Chips-in-organs & organs-on –chips

Coffee Break and Networking 11:00 - 11:30

Session 6: Non-coding RNAs in Heart Regeneration
Chairs: F. Engel and W. Zimmermann

11:30 – 12:00 Christoph Dieterich
Sequence, structure and interactions of circular RNAs in cardiovascular diseases

12:00 – 12:30 Leo Kurian
Making & breaking the heart

12:30 – 12:45 Early-stage researcher presentation
Title pending

Lunch Break 12:45 - 14:00

Session 7: Cardiac Tissue Engineering and Monitoring
Chairs: M.-J. Goumans and T. Šarić

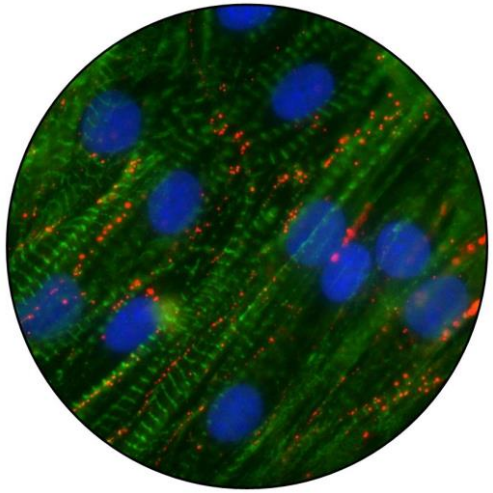
14:00 – 14:30 Wolfgang Zimmermann
Tissue Engineered Heart Repair

14:30 – 15:00 Felix Engel
Heart regeneration: From cardiomyocyte proliferation to cardiac tissue engineering

15:00 – 15:30 Vitaliy Khlebnikov
Non-invasive monitoring of tissue engineering therapies with CEST-MRI

15:30 – 16:00 Marcel Halbach
Electrical integration of transplanted cardiomyocytes

16:00 – 16:15 Concluding remarks and closure



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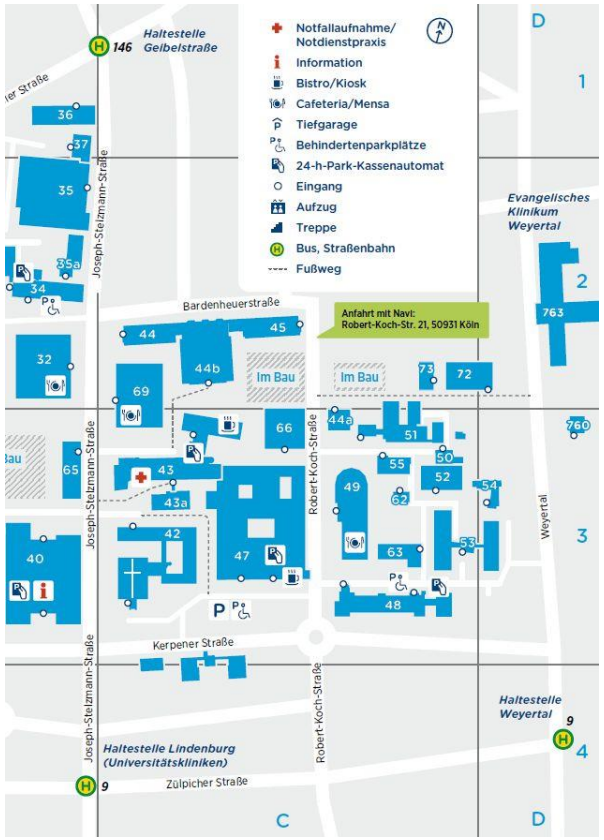
Venue:

Uniklinik Köln
Center for Physiology and Pathophysiology
Robert-Koch-Str. 39
Building 44b
Cologne, Germany

Area map:



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