POSTERS

1. Cardiac vasculature is a niche-like structure for murine adult cardiac progenitor cells. *D. Herrero (ES)*
2. Single cell transcriptomics identifies a hedgehog-mediated immunomodulatory signaling circuit between endothelial and perivascular stromal cells in the eye choroid. *GL. Lehmann (ES)*
3. Exploring the role of hypoxia in coronary stability and cardiac inflammation: new genetic models to study cardiovascular disease. *B. Escobar (ES)*
4. Actomyosin dynamics acts coordinately with bmp and notch signaling pathways to drive apical extrusion of proepicardial cells. *L.I. Andrés-Delgado (ES)*
5. Isure-cre: a new genetic tool to reliably induce and report cre-dependent genetic modifications. *M. Fernández-Chacón (ES)*
6. Foxo1-induced metabolite signaling enforces quiescence in the vascular endothelium. *J. Andrade (GE)*
7. The slit-robo signalling pathway regulates cardiac innervation development. *J. Zhao (UK)*
8. Versican is crucial for the cardiovascular development in medaka fish. *N. Mittal (JP)*
9. The role of transforming growth factor β in phenotypic alteration of vascular smooth muscle cell in Angiotensin II aortic abdominal aneurysm model. *R. García (ES)*
10. Identifying new players in flow mechanosensation using a new high-throughput microfluidic device. *C.G. Fonseca (PT)*
11. Light deficiency in Apoe-/- mice increases the progression and vulnerability of atheroma plaques. *A. Herrero-Cervera (ES)*
12. Cardiac energy metabolism regulation in chronic heart failure. *A. Voronova (RU)*
13. Molecular and operational determi nants of intra-hepatic vascular zonation. *J.M. Gomez-Salinero (US)*
14. New insights into the cellular principles and molecular mechanisms involved in postnatal microvascular remodeling in the mouse heart. *R. Santamaria (ES)*
15. Endothelial Mitofusin2 loss ameliorates metabolic health and protects against obesity. *I. Chivite (ES)*
16. SRSF3 is a key regulator of epicardial formation and differentiation in the murine embryonic heart. *I.E. Lupu (UK)*
17. The role of meis transcription factors in the epicardium. *E. Cruz-Crespillo (ES)*
18. Measuring 3D forces during capillary network remodelling. *D. Zalvidea (ES)*
19. Cardiomyocyte structure alterations and cardiac metabolism in heart failure. *T. Kulikova (RU)*
20. The relationship between cardiac regenerative and metabolic processes. *O. Stepanova (RU)*
21. Intraflagellar transport proteins modulate the activity of the hippo pathway effector yap1 during proepicardium development. *M. Peralta (FR)*
22. CCBE1 is required for coronary vessel development and proper coronary artery stem formation in the mouse heart. *F. Bonet (PT)*
23. ECM1 promotes heart regeneration via regulating pro-regenerative ecm molecules necessary for cardiomyocyte proliferation and migration. *D. Mukherjee (IN)*
24. CYP26B1 is required for normal epicardial function. *S. Lasoye (UK)*
25. Investigating the role of endocardial Notch signalling for neovascularisation of the heart after myocardial infarction. *T. Thomas (UK)*
26. Asymmetric endothelial adherens junctions in angiogenesis. *A. Angulo-Urarte (NL)*
27. Deubiquitinase USP10 regulates notch signaling in the endothelium. *R. Lim (GE)*
28. Automatic staging system for E7.5-E8.5 mouse embryos. *I. Esteban (ES)*
29. Unbalanced dietary vitamin a levels modulates the incidence of congenital heart defects in a 22q11DS mouse model. *E. Amengual-Cladera (ES)*
30. Postnatal lung morphogenesis relies on YAP/TAZ mechanosensitive responses at the endothelial-epithelial interphase. *A. Vadakan Cherian (GE)*
31. Investigating molecular heterogeneity in the developing zebrafish epicardium. *M. Weinberger (UK)*
32. H19 LncRNA displays endocardial restricted expression during cardiac development. *C. García-Padilla (ES)*
33. Widespread cardiomyocyte proliferation and local fibrosis after neonatal apex resection support cardiac benign remodelling and functional recovery: the role of fibroblasts. *V. Sampaio-Pinto (PT)*
34. Dissecting the role of miR-200b in epicardial derived cell diversification and migration. *S. Simon-Fernández (ES)*
35. A tale of forces: how blood flow and chemokines interact to establish endothelial polarity. *P. Barbacena (PT)*
36. Mechanisms driving axial polarity during vascular patterning. *M. A. Dominguez-Cejudo (PT)*

GENERAL INFORMATION

ORGANIZERS

DATES

Madrid, November 16 - 17, 2018

VENUE

CENTRO NACIONAL DE INVESTIGACIONES CARDIOVASCULARES (CNIC)

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Emerging Concepts in Cardiovascular Biology

Madrid, November 16 - 17, 2018
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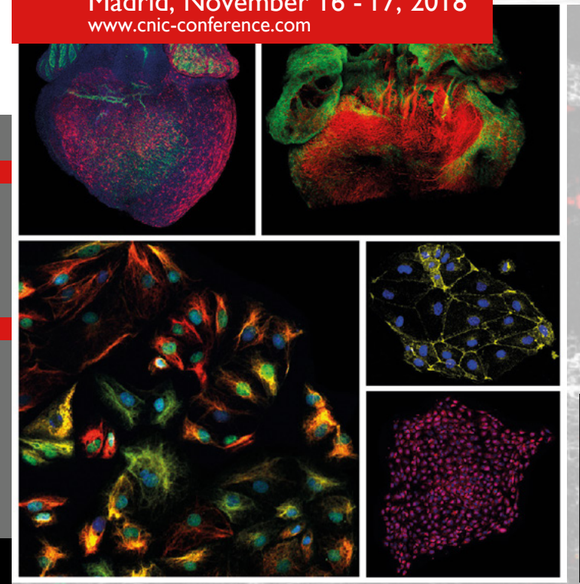

organizers

Rui Benedito
José Luis de la Pompa
José María Pérez Pomares
Didier Stainier

venue: CENTRO NACIONAL DE INVESTIGACIONES CARDIOVASCULARES (CNIC)
Melchor Fernández Almagro, 3 - 28029 Madrid, Spain

Friday, November 16, 2018

08:30-08:50 Registration

08:50-09:00 Opening by the organizers

Session Topic 1 - Biology of the distinct vascular cells

Chairs: Rui Benedito and Michael Potente

09:00-09:30 **Holger Gerhardt.** VIB-KU Leuven Center for Cancer Biology. Leuven, Belgium
Shaping and breaking symmetry in vascular networks

09:30-10:00 **Martin Bennett.** University of Cambridge. UK
Vascular smooth muscle cell proliferation and senescence in atherosclerosis

10:00-10:30 **Christer Betsholtz.** Uppsala University. Sweeden
Decoding vascular cell types, subtypes and phenotypes by single cell RNASeq

10:30-10:45 **Coffee Break – Poster Hang up**

Session Topic 2 - Cardiovascular system development and repair

Chairs: Salim Seyfried and José María Pérez-Pomares

10:45-11:15 **Kristy Red-Horse.** Stanford University. USA
Coronary artery development and regeneration

11:15-11:30 **Selected Short Talk**
Ignacio Flores. CNIC. Madrid, Spain
Telomere control of cardiomyocyte binucleation and heart regeneration

11:30-12:00 **Ken Poss.** Massachusetts Institute of Technology. Duke University Medical Center. Durham, USA
Natural heart regeneration mechanisms

12:00-12:45 **Lunch**

12:00-13:45 **Poster viewing**

13:45-14:15 **Didier Stainier.** Max Planck Institute for Heart and Lung Research. Bad Nauheim. Germany
Heart formation and regeneration in zebrafish

14:15-14:45 **5 x 5 minutes Flash presentations**

Sara González. CNIC. Madrid, Spain
Role of SOX17 in coronary development and its requirement for the nestin neural enhancer activation in endothelial cells during arteriogenesis

Gillermo Luxán. Max Planck Institute for Molecular Biomedicine. Münster. Germany
The role of EPHB4 in adult coronary vasculature

Noelia Muñoz. CNIC. Madrid, Spain
Meis transcription factors are implicated in the regulation of cardiac morphogenesis and electrical impulse transmission

Juan Antonio Guadix. University of Málaga. Spain
COUP-TFII expression defines two different septum transversum cell compartments crucial to cardiac septation and compact ventricular wall growth

Wen Luo. CNIC. Madrid, Spain
Coronary vasculature development and remodelling

Session Topic 3 - Cardiovascular Metabolism and Signalling

Chairs: Didier Stainier and Holger Gerhardt

14:45-15:15 **Mariona Graupera.** Institut d'Investigació Biomédica de Bellvitge (IDIBELL). Barcelona. Spain
PI3King in blood vessel: the importance of keeping PIP3 levels in shape

15:15-15:45 **Peter Carmeliet.** VIB-KU Leuven Center for Cancer Biology. Leuven, Belgium
Angiogenesis revisited: role and (therapeutic) implications of endothelial metabolism

15:45-16:00 **Selected Short Talk**
Liam Ridge. University College London Great Ormond Street Institute of Child Health. United Kingdom
The CXCL12-CXCR4 axis establishes cell polarity during endocardial-derived cell migration within cardiac semilunar valves

16:00-16:30 **Michael Potente.** Max Planck Institute for Heart and Lung Research. Bad Nauheim. Germany
Endothelial nutrient acquisition during quiescence and growth

16:30-16:45 **Selected Short Talk**
Sophie Payne. University of Oxford, United Kingdom
Transcriptional regulation of coronary vessel growth during development and after injury

16:45-17:15 **Zoltan Arany.** University of Pennsylvania. Philadelphia, USA
Metabolism in Endothelial Cells

17:15-17:45 **Coffee Break – Poster viewing**

Session Topic 4 - Biophysical forces in cardiovascular remodelling

Chairs: Jose Luis de la Pompa and Kristy Red-Horse

17:45-18:15 **Arndt Siekmann.** Perelman School of Medicine, University of Pennsylvania. USA
Forcing trees into shape: How hemodynamics coordinate blood vessel growth

18:15-18:45 **Salim Seyfried.** University of Potsdam. Potsdam, Germany
The biomechanics of zebrafish cardiac valve morphogenesis

18:45-19:00 **Claudio Franco.** Instituto de Medicina Molecular. Lisboa, Portugal
Endothelial cell orienteering

19:00-19:30 **Julien Vermot.** Institute of Genetics and Molecular and Cellular Biology (IGBMC). Strasbourg, France
Cell response to forces in the developing cardiovascular system

19:30-20:00 **Cecilia Lo.** University of Pittsburgh, USA
Intrinsic myocardial defects in hypoplastic left heart syndrome

Saturday, November 17, 2018

Session Topic 5 - Angiocrine function of vessels and organ regeneration

Chairs: Tatiana Petrova and Claudio Franco

9:00-9:30 **Ralf Adams.** Max Planck Institute for Molecular Biomedicine. Münster. Germany
Molecular heterogeneity and functional specialization of vascular cells

9:30-9:45 **Selected Short Talk**
Richard Tyser. University of Oxford, United Kingdom
Defining cardiac progenitor cell types genetically and anatomically at the single cell level during cardiac crescent development

9:45-10:00 **Selected Short Talk**
Rashmi Priya. Max Planck Institute for Heart and Lung Research. Bad Nauheim, Germany
Contractility anisotropy patterns the trabecular layer during cardiac development

10:00-10:30 **Bin Zhou.** Shanghai Institutes for Biological Sciences. China
Role of resident vascular stem cells in blood vessel repair

10:30-10:45 **Coffee Break – Poster viewing**

10:45-11:15 **Mauro Giacca.** International Centre for Genetic Engineering and Biotechnology. Trieste, Italy
Harnessing miRNAs for cardiac regeneration

11:15-11:45 **Shahin Rafii.** Weill Cornell Medical College. New York. USA
Adaptable durable endothelial cells for organogenesis and tumorigenesis

Session Topic 6 - Lymphangiogenesis and its role in cardiac repair

Chairs: Mariona Graupera and Arndt Siekmann

11:45-12:15 **Tatiana Petrova.** University of Lausanne. Switzerland
Organ-specific mechanisms of lymphatic vascular development and function

12:15-12:30 **3 x 5 minutes Flash presentations**

Fidel Lolo. CNIC. Madrid, Spain
Caveolae integrate mechanical force of blood flow and LDL management during atherogenesis

Ghislaine Lioux. CNIC. Madrid, Spain
The second Heart field contributes to the cardiac lymphatic vasculature

Álvaro Sahún. CNIC. Madrid, Spain
New insights into post-myocardial infarction revascularization: MT4-MMP regulates vascular smooth muscle cell proliferation in coronary arteries

12:30-13:00 **Paul Riley.** University of Oxford. UK
Immunomodulation via the cardiac lymphatic system to improve heart repair

13:00-13:30 **Kari Alitalo.** University of Helsinki. Finland
Vascular growth factors in cardiac protection and repair

13:30-13:45 **Concluding Remarks – Remove posters**

13:45 **Lunch boxes and Farewell**