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## FIGURES LEGENDS AND CREDITS BY RESEARCH AREA

### VASCULAR PATHOPHYSIOLOGY

- 1 FDG-PET/CT imaging of the abdominal aorta (yellow circle) in gene modified minipigs with progressing and regressing atherosclerosis. (P. Nogales, J. F. Bentzon).
- 2 Atherosclerotic lesions in progeroid Apoe-null mice exhibit abnormal CD31 expression and exacerbated cellular proliferation. Confocal microscopy images in aortic root from control and progeroid Apoe-null mice fed high-fat diet for 16 weeks. White, Ki67 (proliferation marker); red, smooth muscle  $\alpha$ -actin (SMA, smooth muscle cell marker); green, CD31 (endothelial cell marker); blue, Hoechst 33342 (R.M. Nevado, M. Hamczyk, P. Gonzalo and V. Andrés)
- 3 Elimination of senescent cells reduces fibrosis and necrosis in hearts of mdx dystrophic mice. Mdx mice of 12 months of age were treated with senolytics for 3 months, and hearts were analyzed for fibrosis and necrosis by Sirius Red staining and hematoxylin and eosin (H&E), respectively. (P. Muñoz-Canoves)
- 4 Increased immature cardiomyocyte lineage contribution to the ventricular wall of mice with Mybpc3 mutations causing HCM. Left, Control mice. Right, mutant mice. Note the increased territory of CM expressing GFP. (J.L. de la Pompa)
- 5 A12 antibody recognizes the atheroma plaque. (A. R. Ramiro)

### MYOCARDIAL PATHOPHYSIOLOGY

- 1 Murine embryonic fibroblasts under hypoxia (A. Santamans, G. Sabio)
- 2 The Cardiac Arrhythmia Laboratory investigates the molecular mechanisms of arrhythmias in ion channel diseases and cardiomyopathies. (J. Jalife)
- 3 Representative atrial electromechanical assessment by noninvasive transthoracic echocardiography in a patient with overt electromechanical dissociation at early stages of persistent atrial fibrillation. The data show faster lead II ECG-derived electrical activation rates (7.45 Hz) than their simultaneously acquired tissue Doppler imaging-derived mechanical counterparts (5.13 Hz and 3.30 Hz for the left and right atria, respectively), which defines the presence of atrial electromechanical dissociation. LA, left atrium; LV, left ventricle; RA, right atrium; RV, right ventricle; TDI, tissue Doppler imaging; TTE, transthoracic echocardiography. (D. Filgueiras)
- 4 The Molecular Cardiology team uses a holistic approach to study inherited arrhythmogenic diseases. This approach encompasses morpho-functional studies in living animals (A) and cells (B), as well as super-resolution microscopy (C) and molecular biology. The figure illustrates some of the techniques employed in experiments in pigs. (S. Priori)

### CELL AND DEVELOPMENTAL BIOLOGY

- 1 iFlpMosaics showing an endothelial tip cell (yellow) branching out from a crowd of endothelial cells in a mouse retina (I. Garcia Gonzalez, R. Benedito).
- 2 Multispectral analysis of heart cells in the myocardium (I. Garcia Gonzalez, R. Benedito).
- 3 Differentiation of skeletal muscle cells (R. Silva, J. Alegre-Cebollada)
- 4 A Notch activity reporter shows mosaic activity in the early mouse embryo (M. Sendra, M. Torres)
- 5 Developing coronary lymphatics (E. de la Cruz, M. Torres)
- 6 Multicolor immunophenotyping of human bone marrow (B. Álvarez)

### CLINICAL STUDIES

- 1 Scientific highlights in 2021 of the Translational Laboratory for Cardiovascular Imaging and Therapy: from metoprolol effectiveness in acute myocardial infarction and COVID-19 critical patients to new advances in cardio-oncology targeted-therapies and development of faster cardiac magnetic resonance protocols (C Galán, B Ibáñez)