

SUPPLEMENTARY MATERIAL

Lamin A/C ablation in vascular smooth muscle cells, cardiomyocytes, and cardiac fibroblasts causes cardiac and vascular dysfunction: Potential role in the pathophysiology of *LMNA*-related dilated cardiomyopathies

Alberto Del Monte-Monge^{1,2}, Íñigo Ruiz-Polo de Lara¹, Pilar Gonzalo^{1,2}, Carla Espinós-Estévez^{1,2}, María González-Amor^{1,2}, Miguel de la Fuente¹, María Jesús Andrés-Manzano^{1,2}, Víctor Fanjul^{1,2,*}, Juan R. Gimeno^{2,3}, Roberto Barriales^{2,4}, Beatriz Dorado^{1,2}, Vicente Andrés^{1,2,**}

¹ Centro Nacional de Investigaciones Cardiovasculares (CNIC), 28029 Madrid, Spain

² Centro de Investigación Biomédica en Red de Enfermedades Cardiovasculares (CIBERCV), Spain

³ Cardiac Department, Hospital Clínico Universitario Virgen Arrixaca, Murcia, Spain

⁴ Unidad de Cardiopatías Familiares, Complejo Hospitalario Universitario A Coruña (INIBIC-CHUAC), 15006 A Coruña, Spain

* Present address: Savana Medical, 28013 Madrid, Spain

** Corresponding author:

Vicente Andrés

CNIC, Melchor Fernández Almagro 3, 28029 Madrid (Spain)

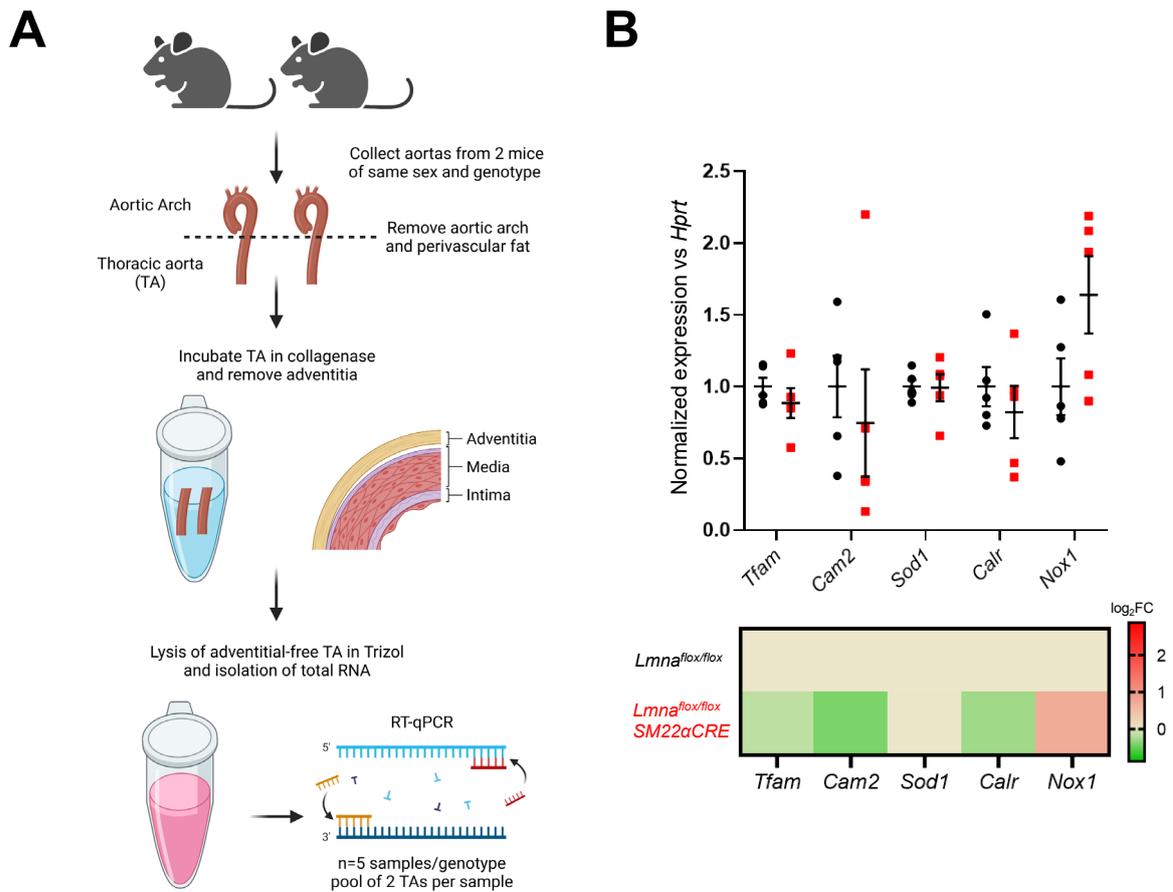
Phone: +34-91 453 12 00 (Ext. 1502)

E-mail: vandres@cnic.es

LEGENDS SUPPLEMENTARY FIGURE AND VIDEOS

- **Supplementary figure S1. Real time quantitative PCR analysis of adventitia-free mouse thoracic aorta.**
- **Supplementary video S1. Representative echocardiography video (sagittal plane) of a 4-week-old *Lmna*^{flox/flox} mouse.**
- **Supplementary video S2. Representative echocardiography video (sagittal plane) of a 4-week-old *Lmna*^{flox/flox}*SM22aCre* mouse.**
- **Supplementary video S3. Representative echocardiography video (longitudinal plane) of a 4-week-old *Lmna*^{flox/flox} mouse.**

Supplementary video S4. Representative echocardiography video (longitudinal plane) of a 4-week-old *Lmna*^{flox/flox}*SM22aCre* mouse.



Supplementary Figure S1. Real time quantitative PCR analysis of adventitia-free mouse thoracic aorta. (A) Protocol for processing thoracic aorta (TA) samples for real-time quantitative PCR (RT-qPCR). Aortas were isolated from *Lmna*^{flox/flox} and *Lmna*^{flox/flox}*SM22αCre* mice. After removing the aortic arch and perivascular tissue, TA samples were incubated with type I collagenase. Adventitia was then removed manually, and samples from mice of the same genotype and sex were paired for isolation of total RNA. Created with BioRender.com. (B) RT-qPCR analysis of adventitia-free TA, examining the expression of the indicated genes (n=5 each genotype). Data are presented as the ΔC_t fold change relative to control *Lmna*^{flox/flox} samples. *Hprt* was used as the housekeeping gene for normalization. The heatmap shows the log₂ of the fold-change relative to control *Lmna*^{flox/flox} mice. (=0). Statistical differences were analyzed using unpaired two-tailed t-test.