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Supplemental information

A defective mechanosensing pathway affects fibroblast-to-myofibroblast transition in the old male mouse heart

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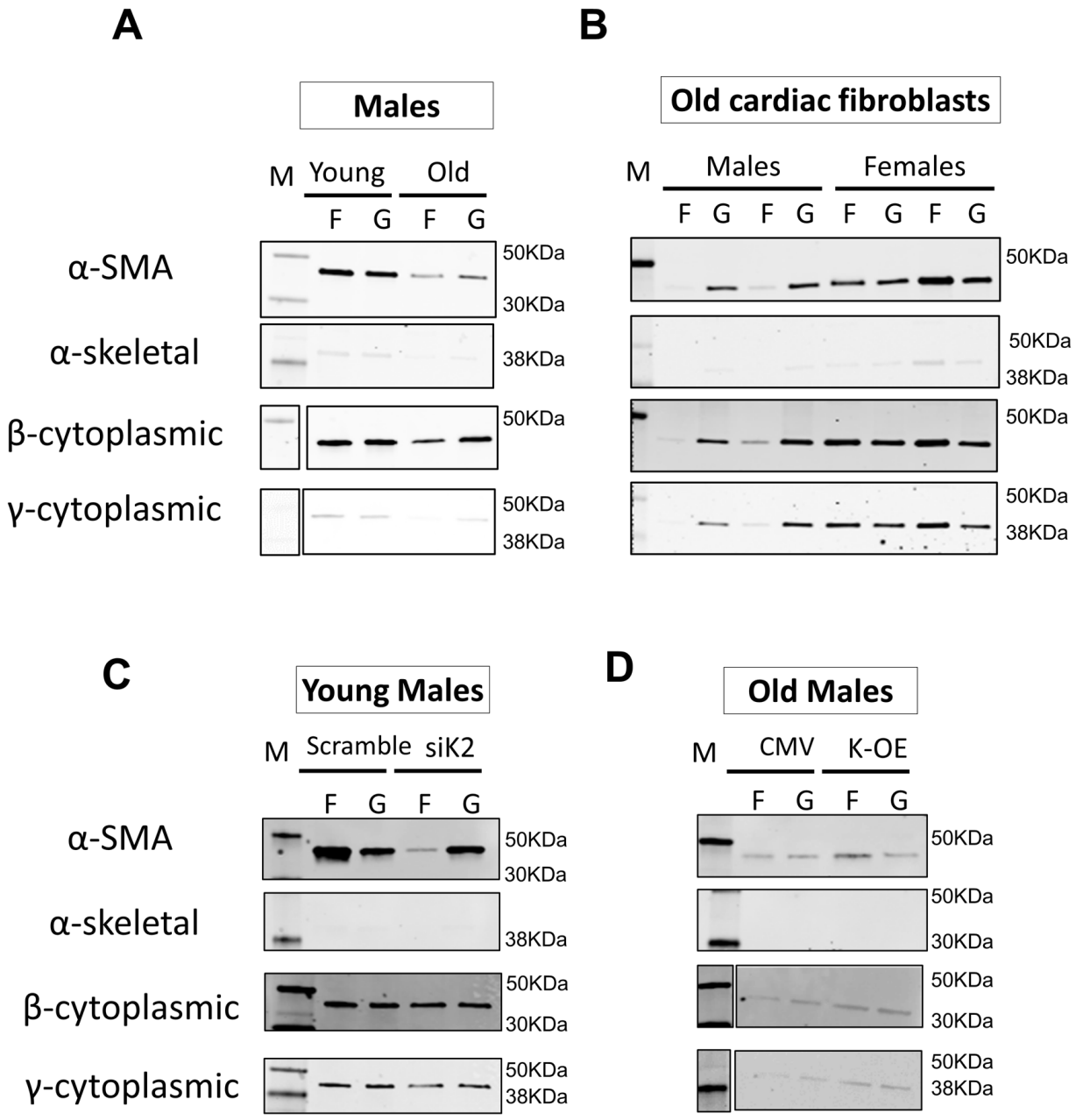
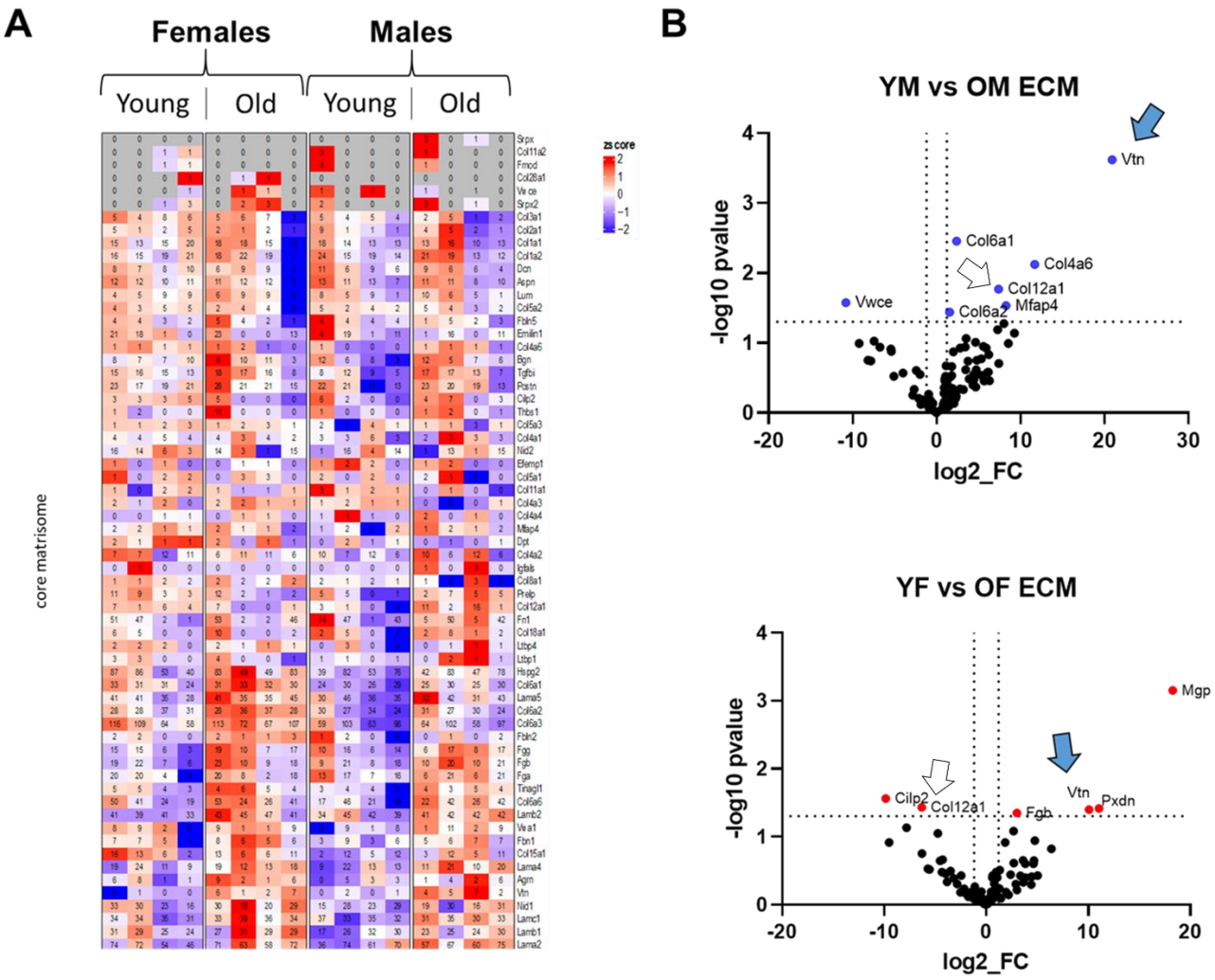
Supplemental S1. **Changes in actin isoforms and polymerization dynamics**



Supplemental S2. **Changes in matrisome determined by mass-spectrometry.**



Supplemental S1. **Changes in actin isoforms and polymerization dynamics.**

Related to Figure 1 and Figure 3

Representative Western blot showing the changes in F- and G-actin for the different actin isoforms (α-SMA, α-skeletal, β-cytoplasmic, ϒ-cytoplasmic) in the lysate from young male vs. old male cardiac fibroblasts (**A**.) and old male vs. old female fibroblasts (**B.),** young male control versus Kindlin-2 deficient fibroblasts ("siK2") (**C**.) or old male control ("CMV") vs. Kindlin-2 overexpressing old ("K-OE") fibroblasts (**D**.). N=5-6 per group. M depicts the position of the molecular weight; the corresponding molecular weight is indicated on the right side of the blot.

For S1A third and fourth panels (β- and γ-cytoplasmic actins), two panels (F- and G-actin fractions for a young male sample) were removed between the samples shown in the picture and the molecular weight, and this gap is indicated by a separated square for the molecular weight.

Supplemental S2. **Changes in matrisome determined by mass-spectrometry.**

Related to Figure 2

Decellularized matrices were prepared from young and old mouse hearts (male and female) and processed for mass spectrometry analysis. **A.** Heatmap comparing the core matrisome identified in young female, old female, young male and old male cardiac ECMs (n=4). **B.** Volcano plots showing the main difference in young vs old male matrisome (upper panel) and young vs old female matrisome (lower panel). Color dots (blue for male, red for female) depict proteins that are significantly changed in the old vs. young ECMs (Log2 Fold change >1.2, $p<0.05$).