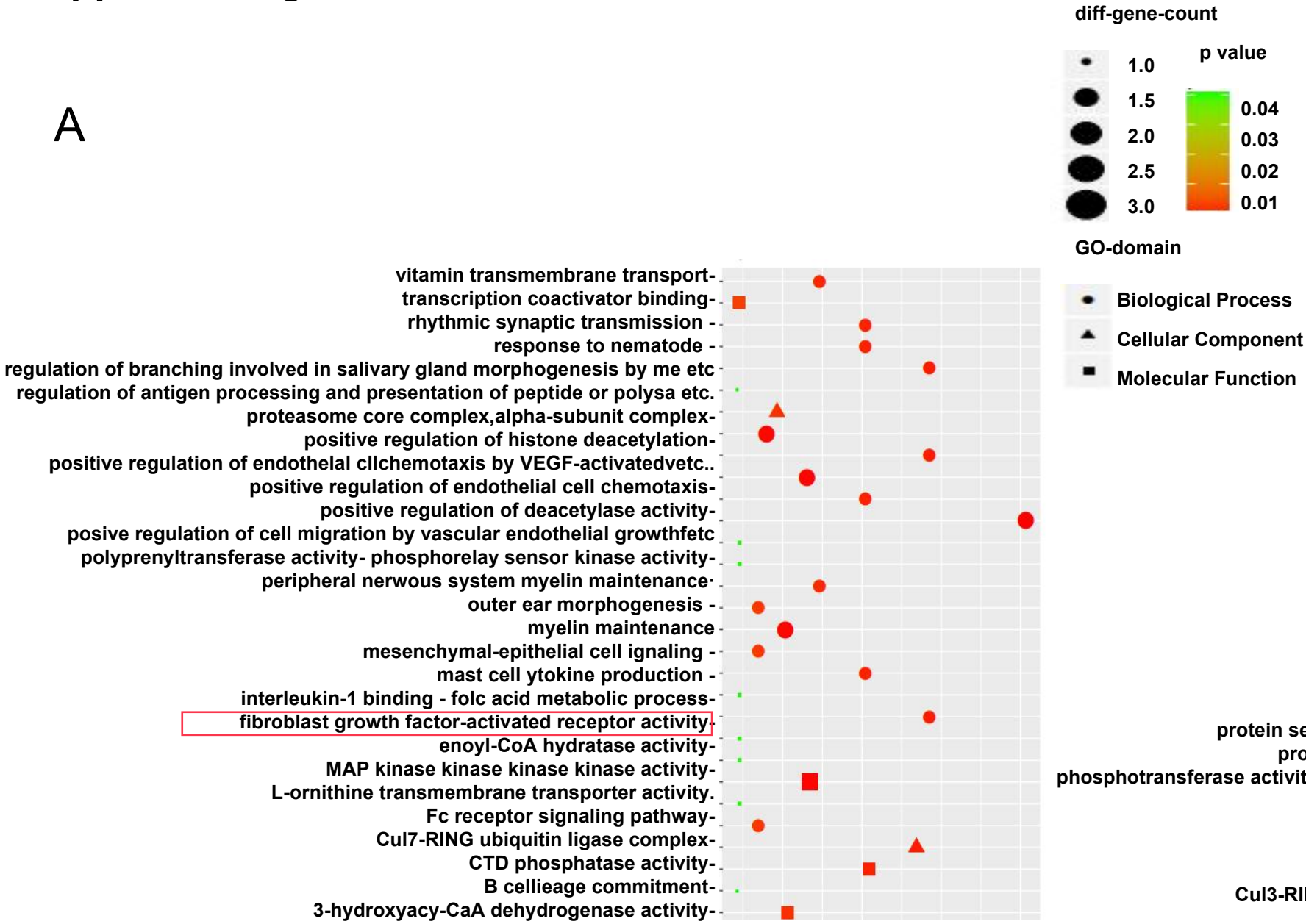
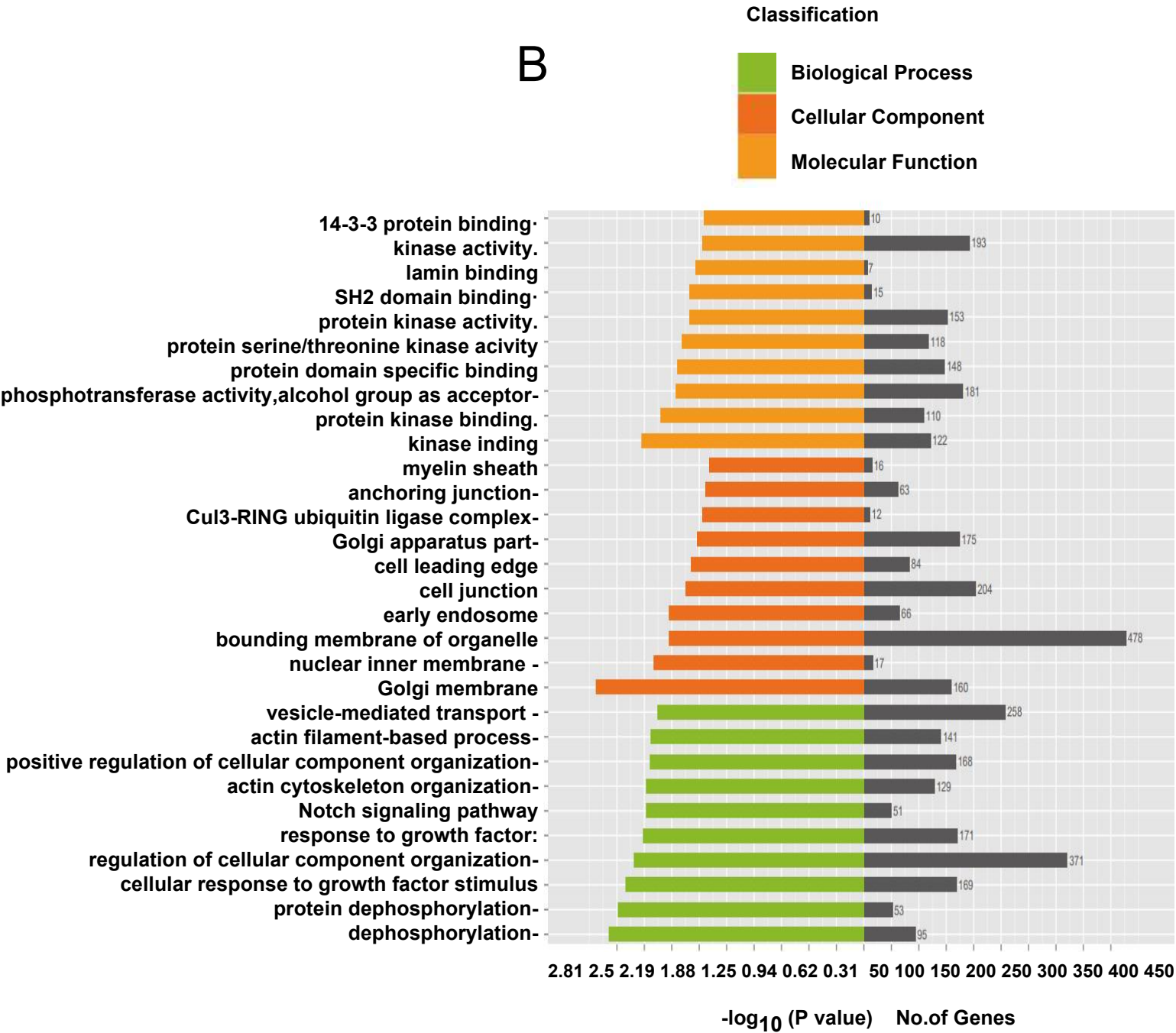


Supplement figure 1

A

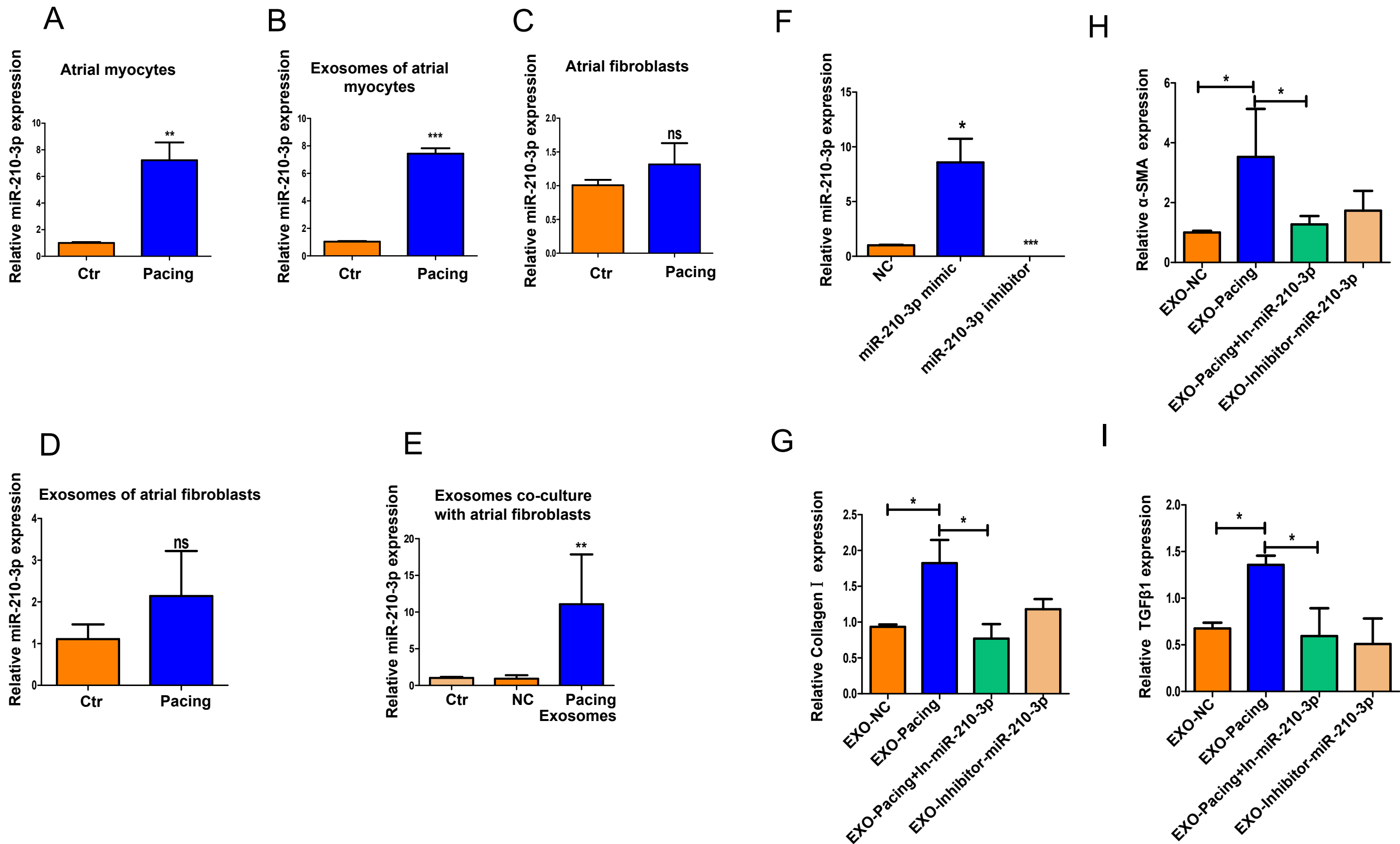


B



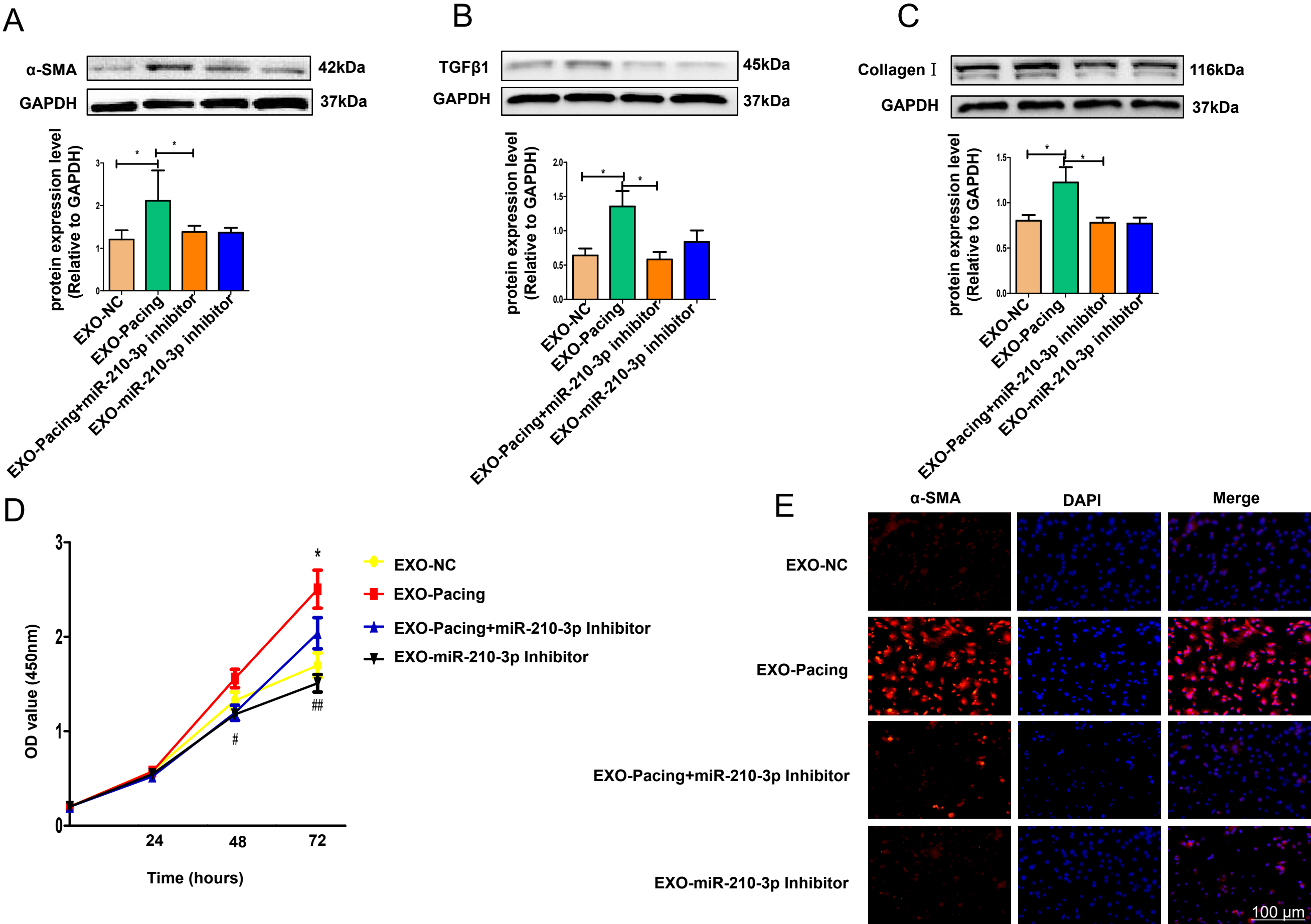
Bioinformatic analysis of miR-210-3p associated with fibroblasts activity. (A, B) GO and KEGG pathway analysis of the differentially expressed miRNAs in atrial myocytes-derived exosomes enriched in graph of regulated proteins in fibroblasts activity.

Supplement figure 2



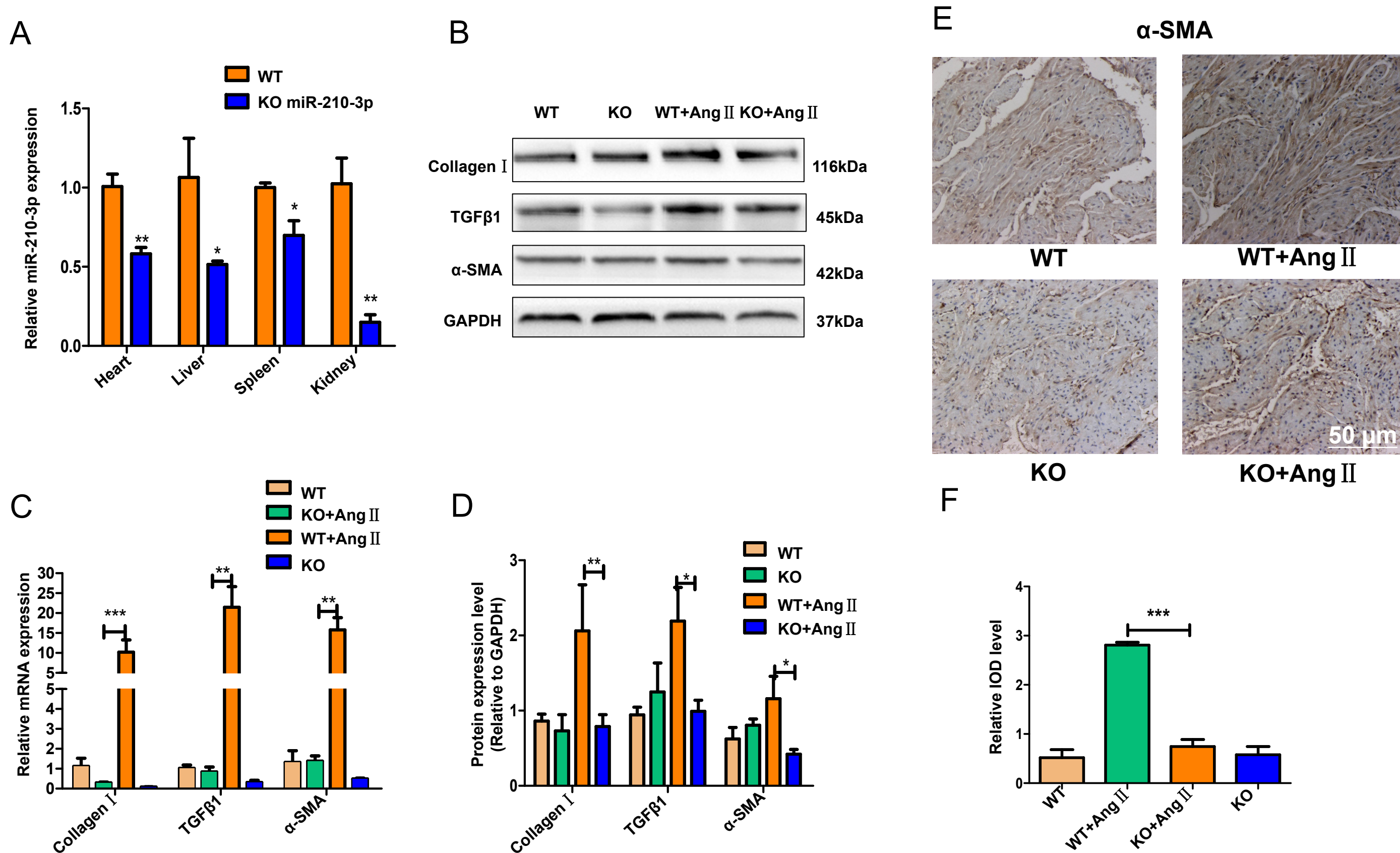
qRT-PCR analysis of the differentially expressed miRNAs. (A, B) Expression levels of miR-210-3p in atrial myocytes and atrial myocytes-derived exosomes. (C, D) Expression levels of miR-210-3p in atrial fibroblasts and atrial fibroblasts-derived exosomes. (E) Co-culture of atrial fibroblasts with exosomes derived from atrial myocytes ($***P<0.001$ vs. Ctr and NC). (F) qRT-PCR analyzed the transfection efficiency of atrial myocytes ($*P<0.05$, $***P<0.001$ vs. Ctr). (G-I) The mRNA of α -SMA, Collagen I and TGF β 1 were evaluated by qRT-PCR ($*P<0.05$).

Supplement figure 3



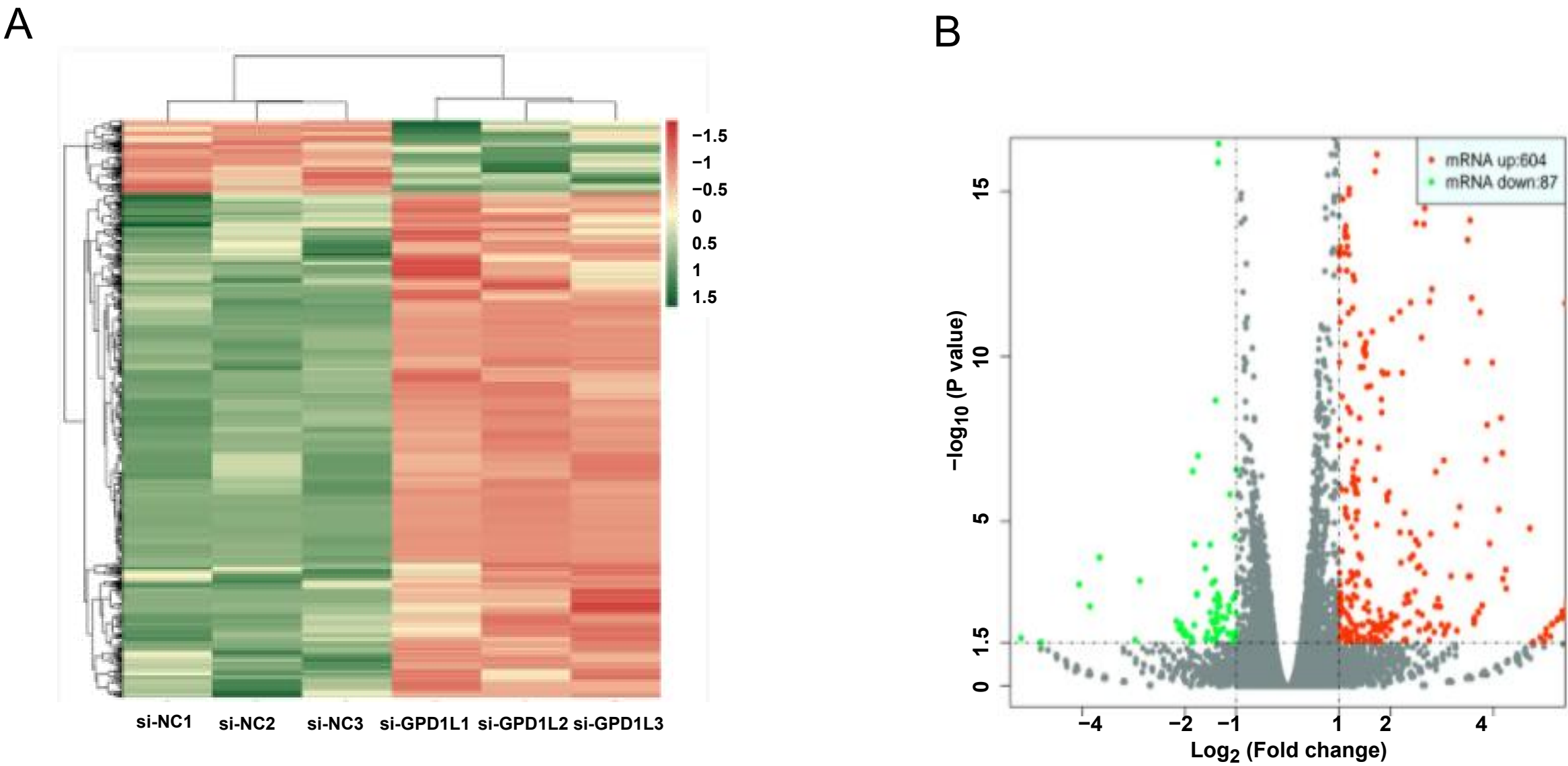
Exosomal miR-210-3p derived from atrial myocytes promotes atrial fibroblasts proliferation and activation. (A-C) Western blot analysis of protein level in atrial fibroblasts treated with atrial myocytes-derived exosomes ($*P<0.05$). (D) CCK8 assay to detect the proliferation of atrial fibroblasts treated with atrial myocytes-derived exosomes ($*P<0.05$ vs. EXO-NC, $\#P<0.05$, $\#\#P<0.01$ vs. EXO-Pacing). (E) Immunofluorescence staining to detect the relative expression levels of α -SMA, staining for α -SMA (red) and DAPI (blue) in atrial fibroblasts. Scale bar: 100 μ m.

Supplement figure 4



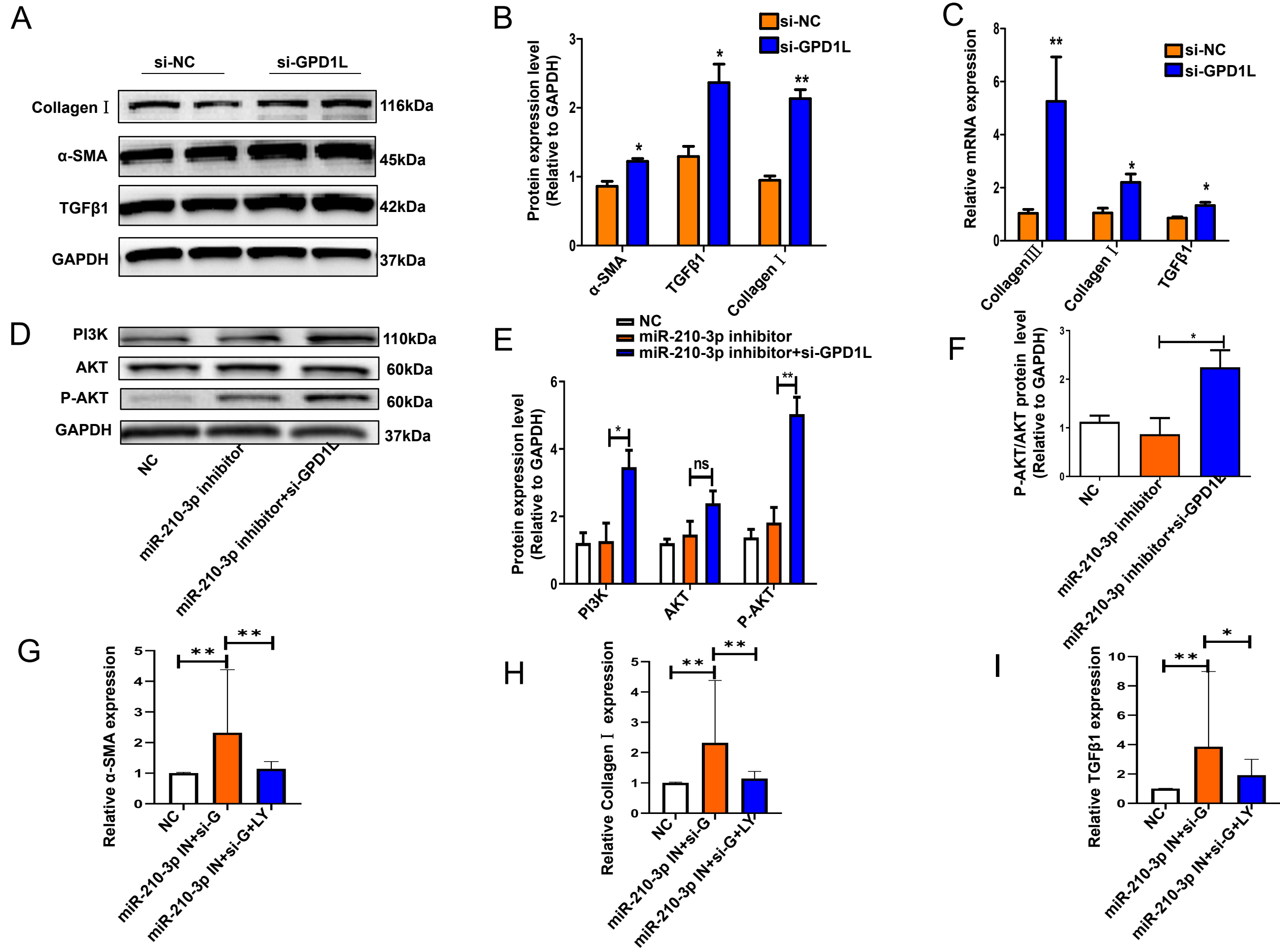
Effects of knocking out miR-210-3p on atrial fibrosis in rats. (A) qRT-PCR analyzed expression of miR-210-3p in various organs of rats (n=7 * P <0.05, ** P <0.01 vs. WT). (B, D) Western blot analysis of TGFβ1, α-SMA and Collagen I expression level in atrial tissues (n=7 * P <0.05, ** P <0.01 vs. KO+Ang II). (C) qRT-PCR analysis of TGFβ1, α-SMA and Collagen I expression level in atrial tissues (n=7 * P <0.05, ** P <0.01 vs. KO+Ang II). (E, F) Immunohistochemical expression of α-SMA, scale bar: 50μm (n=7 *** P <0.001 vs. KO+Ang II).

Supplement figure 5



RNA sequencing analysis. (A, B) RNA-Seq analysis of differentially expressed mRNAs that GPD1L regulates proliferation and activation in atrial fibroblasts.

Supplement figure 6



miR-210-3p promotes proliferation and collagen synthesis by targeting GPD1L/PI3K/AKT. The expression levels of proteins (A, B) and mRNAs (C) in si-NC and si-GPD1L groups (* $P<0.05$, ** $P<0.01$). (D, E) Western blot analysis of PI3K, p-AKT and AKT expression level in atrial fibroblasts. (F) The expression level of p-AKT/AKT (* $P<0.05$, ** $P<0.01$). (G-I) qRT-PCR analysis of α-SMA, CollagenI and TGFβ1 expression in atrial fibroblasts (* $P<0.05$, ** $P<0.01$).