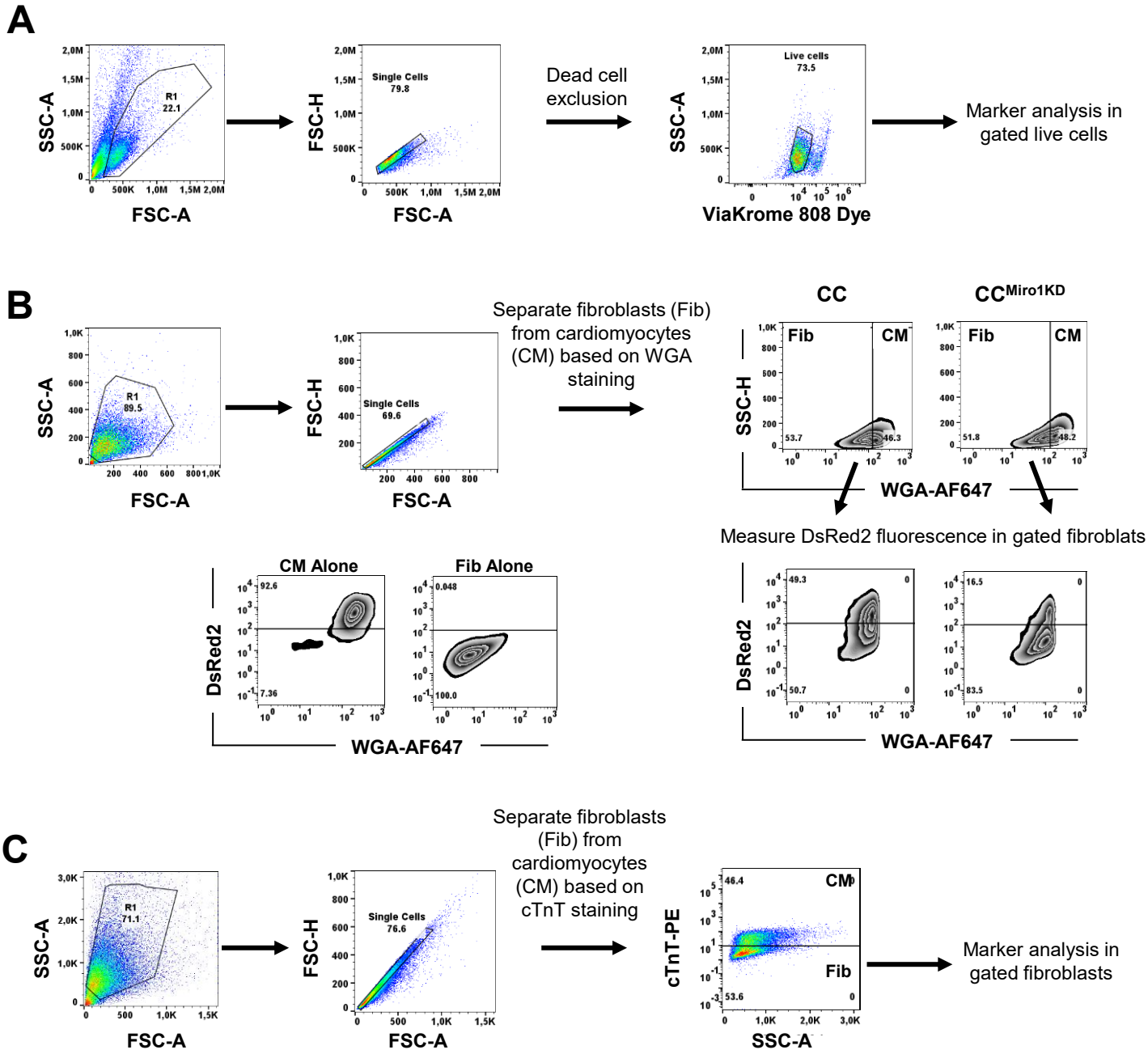
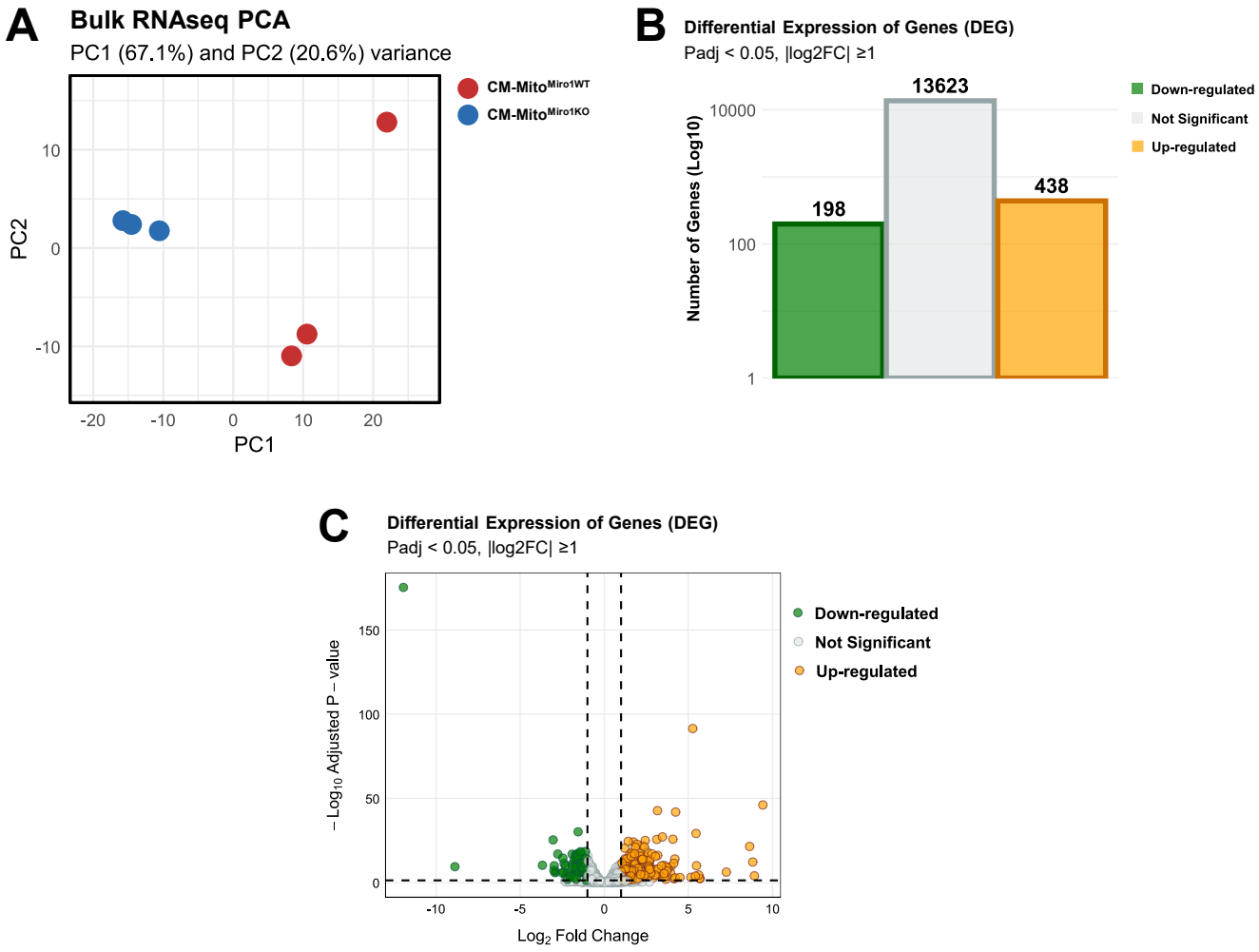
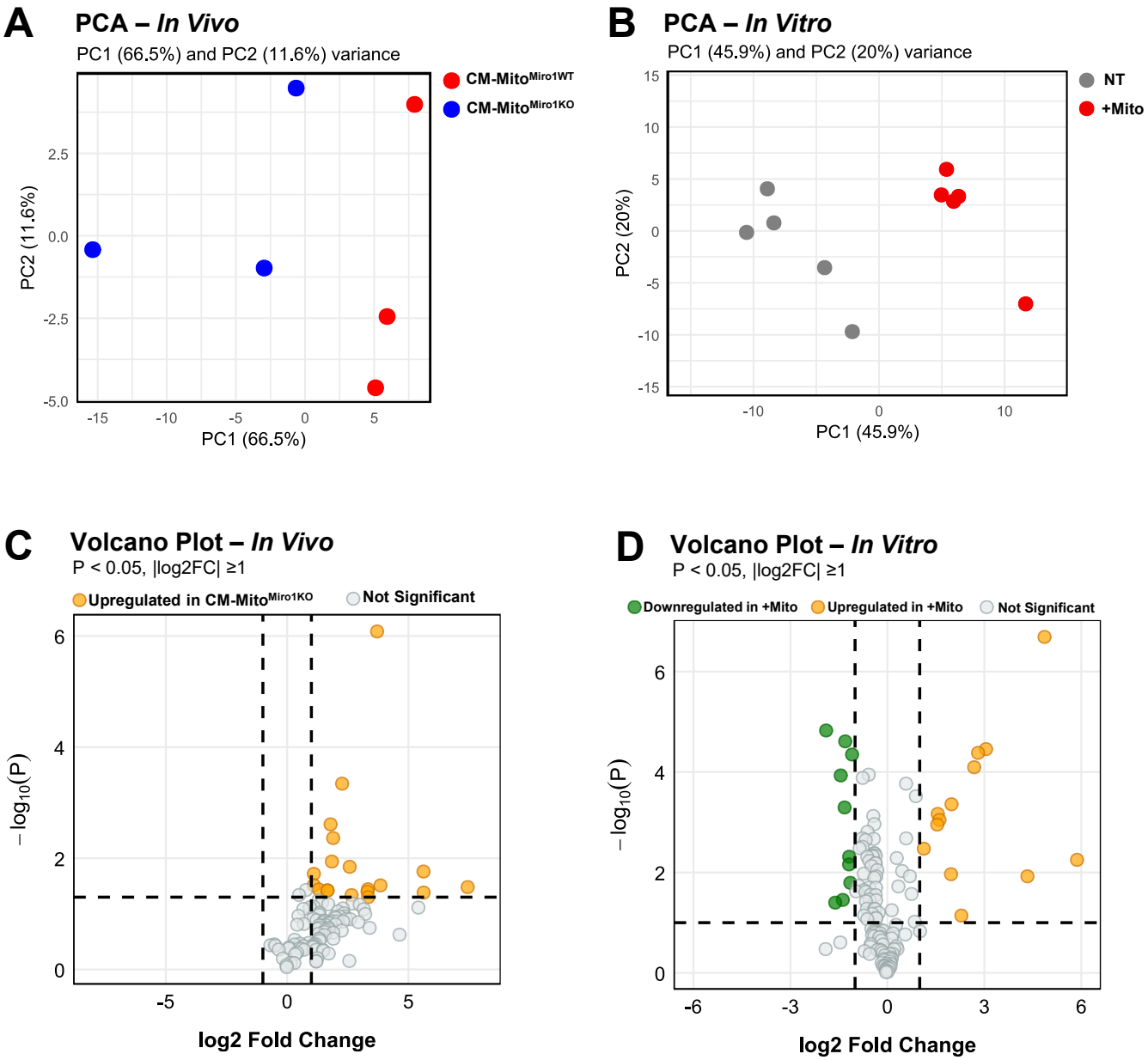


Supplementary Figure S1. Flow cytometry gating strategies. (A) Gating strategy used for flow cytometry analyses of mouse cardiac fibroblasts magnetically isolated from mouse hearts or of bulk cardiac cell preparations depleted of cardiomyocytes. **(B)** Gating strategy used to monitor mitochondria transfer between human iPSC-derived cardiomyocytes and human cardiac fibroblasts. **(C)** Gating strategy used to assess the expression of markers of interest in fibroblasts following co-culture.



Supplementary Figure S2. Bulk RNA-seq analysis showing **(A)** principal component analysis (PCA), **(B)** differentially expressed gene (DEG) bar plot, **(C)** and volcano plot.



Supplementary Figure S3. Metabolomic profiling of in vivo and in vitro models. *(A, B)* Principal component analysis (PCA) showing the separation of metabolite profiles between experimental groups in the in vivo **(A)** and in vitro **(B)** models. **(C, D)** Volcano plots showing differential metabolite abundance in the in vivo **(C)** and in vitro **(D)** comparisons. Dashed lines indicate the raw p-value threshold ($p < 0.05$) and fold-change thresholds ($|\log_2 \text{fold change}| \geq 1$); metabolites are coloured according to the direction and significance of their changes.