SUPPORTING INFORMATION

Role of cellular retinol-binding protein, type 1 and retinoid homeostasis in the adult mouse heart: a multi-omic approach

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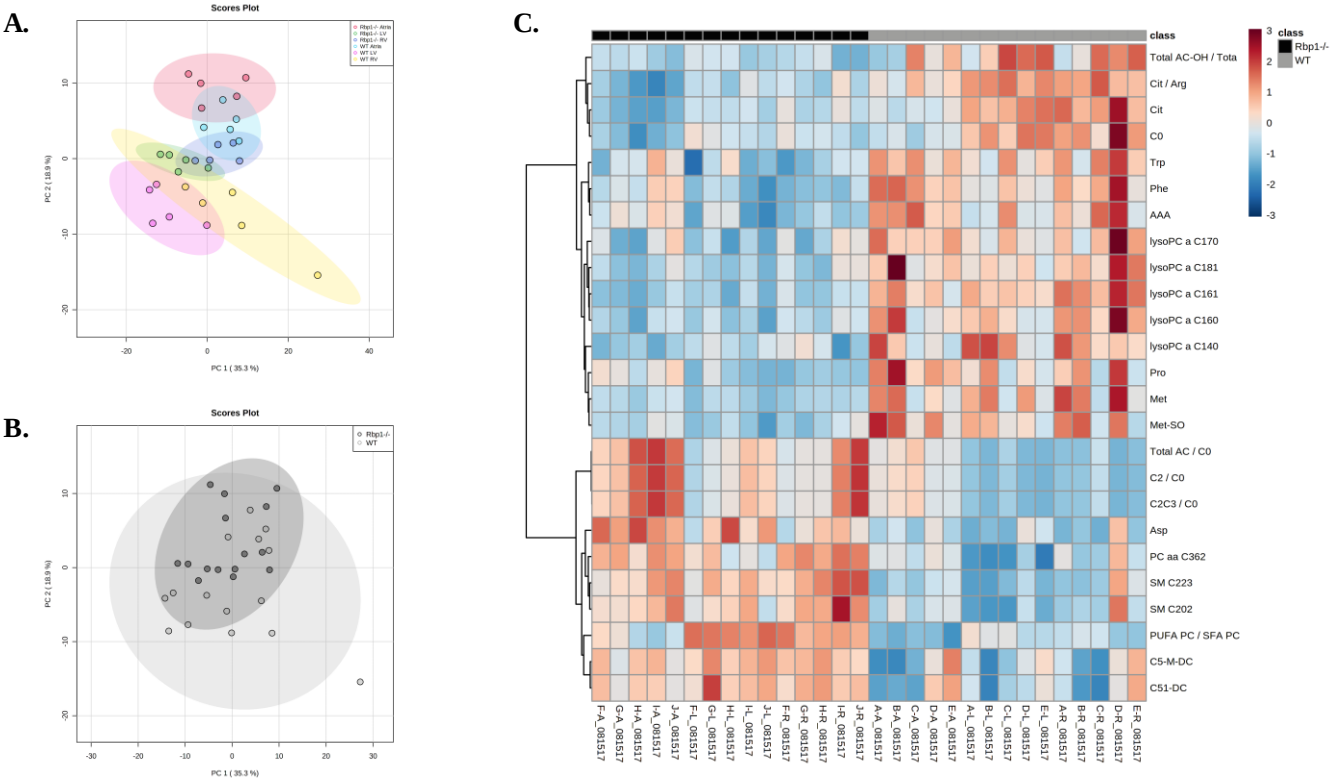
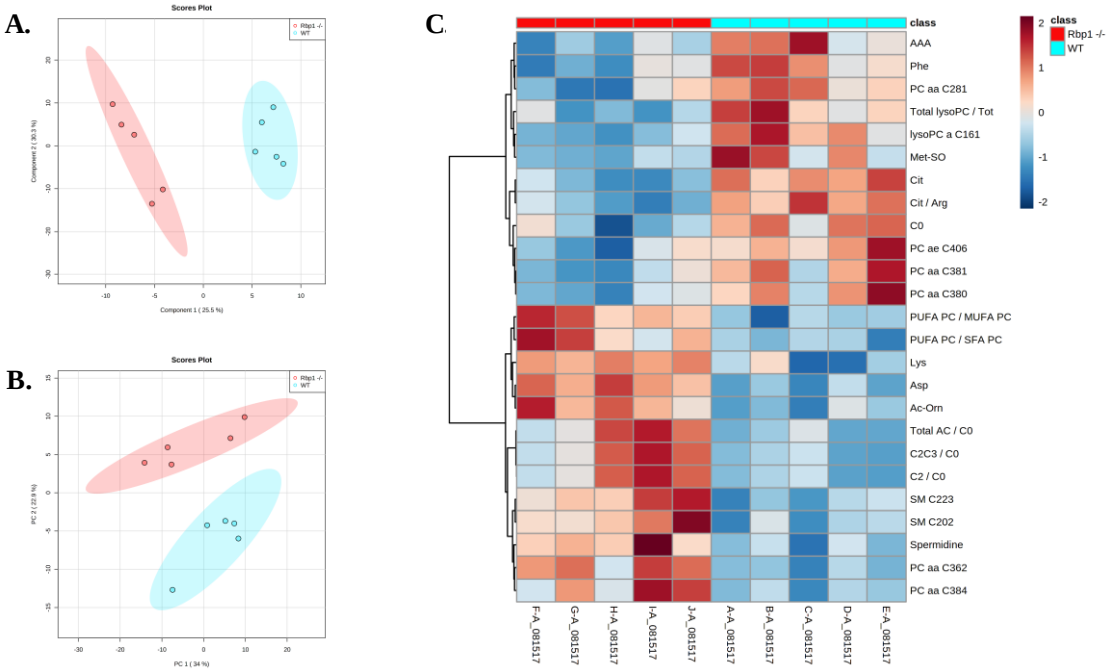


Supplementary Figure 1. Multivariate analysis and hierarchical clustering of *Rbp1*$^{-/-}$ and WT mice tissues.

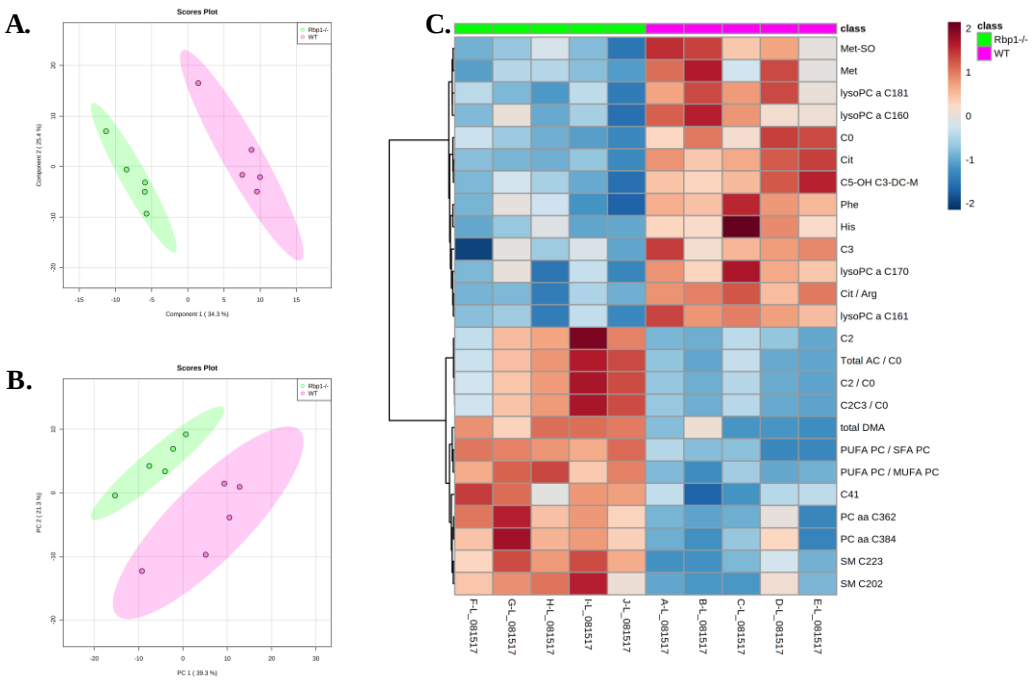
A. PCA plot comparing *Rbp1*$^{-/-}$ Atria (Red), *Rbp1*$^{-/-}$ LV (Green), *Rbp1*$^{-/-}$ RV (Blue), WT Atria (Cyan), WT LV (Magenta), WT RV (Yellow), with n=5 per group.

B. PCA plot comparing all *Rbp1*$^{-/-}$ samples (black) and WT samples (gray). n=15 per group. PCA displayed a total of 54.2% variance, attributed to PC1 (35.3%) and PC2 (18.9%) components. The 95% confidence intervals are indicated by elliptical patterns per group.

C. Heatmap displaying the top 25 metabolites of *Rbp1*$^{-/-}$ (black) and WT (gray) based on t-test/ANOVA, Euclidean distancing, and Ward clustering.



Supplementary Figure 2. Multivariate analysis and hierarchical clustering displays statistical metabolite differences between atria for WT (cyan) and *Rbp1*$^{-/-}$ (red) mice.
A. PLS-DA plot R2=0.99. Q2=0.91. N=5 per group. Each point represents a data set from an individual animal tissue. The 95% confidence intervals are indicated by elliptical patterns per group.
B. PCA plot. PCA displayed a total of 56.9% variance, attributed to PC1 (34%) and PC2 (22.9%) components. The 95% confidence intervals are indicated by elliptical patterns per group.
C. Heatmap displaying the top 25 metabolites based on t-test/ANOVA, Euclidean distancing, and Ward clustering.

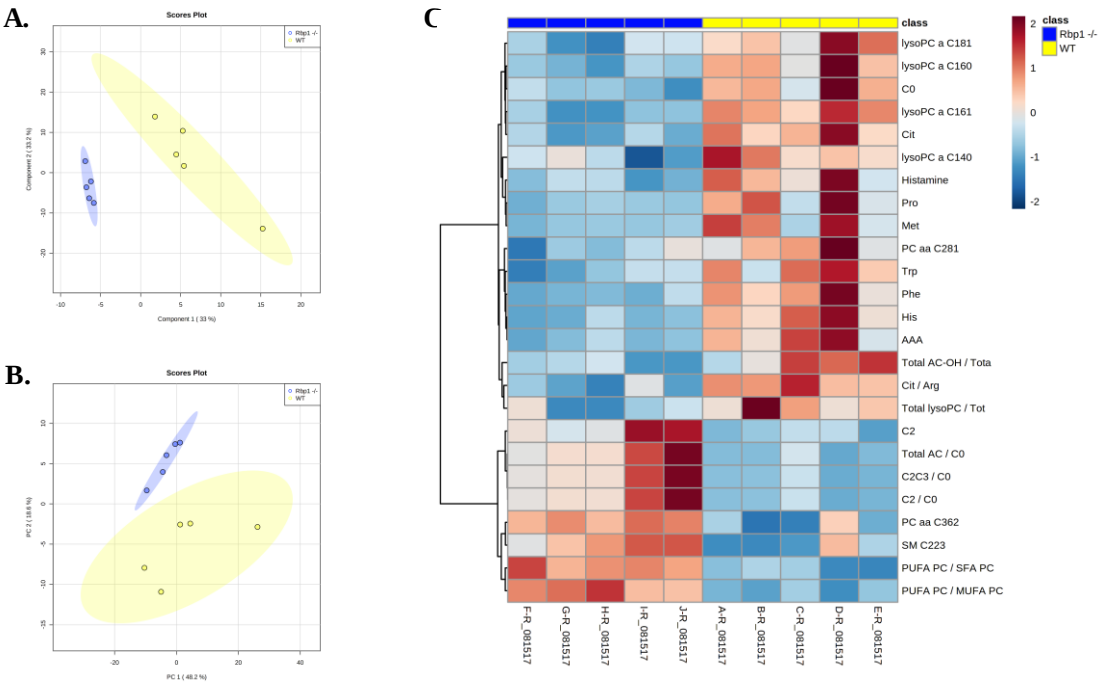


Supplementary Figure 3. Multivariate analysis and hierarchical clustering displays statistical metabolite differences between Left Ventricle of WT (magenta) and *Rbp1*$^{-/-}$ (green) mice.

A. PLS-DA plot R2=0.99. Q2=0.82. N=5 per group. Each point represents a data set from an individual animal tissue. The 95% confidence intervals are indicated by elliptical patterns per group.

B. PCA plot. PCA displayed a total of 60.6% variance, attributed to PC1 (39.3%) and PC2 (21.3%) components. The 95% confidence intervals are indicated by elliptical patterns per group.

C. Heatmap displaying the top 25 metabolites based on t-test/ANOVA, Euclidean distancing, and Ward clustering.

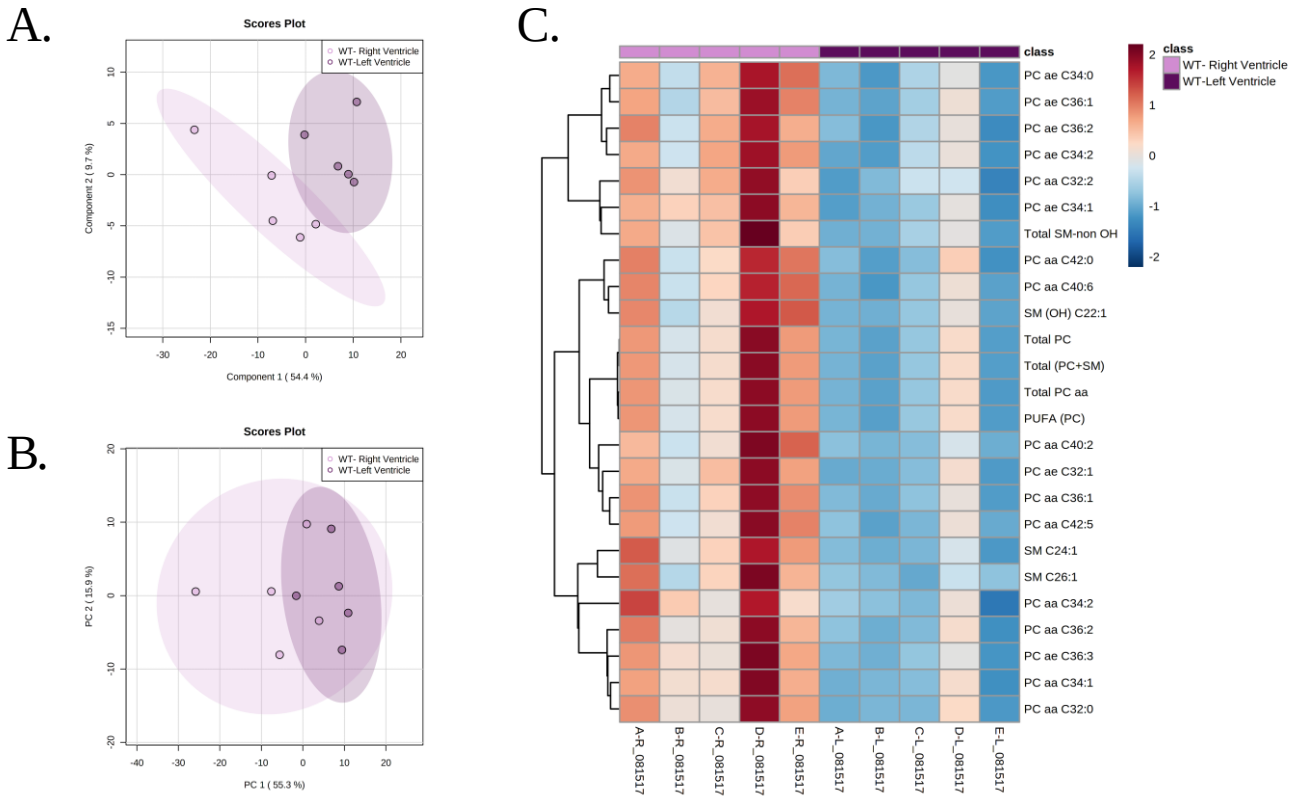


Supplementary Figure 4. Multivariate analysis and hierarchical clustering displays statistical metabolite differences between Right Ventricle (RV) for WT (blue) and *Rbp1*$^{-/-}$ (yellow) mice.

A. PLS-DA plot R2=0.99. Q2=0.83. N=5 per group. Each point represents a data set from an individual animal tissue. The 95% confidence intervals are indicated by elliptical patterns per group.

B. PCA plot. PCA displayed a total of 66.8% variance, attributed to PC1 (48.2%) and PC2 (18.6%) components. The 95% confidence intervals are indicated by elliptical patterns per group.

C. Heatmap displaying the top 25 metabolites based on t-test/ANOVA, Euclidean distancing, and Ward clustering.

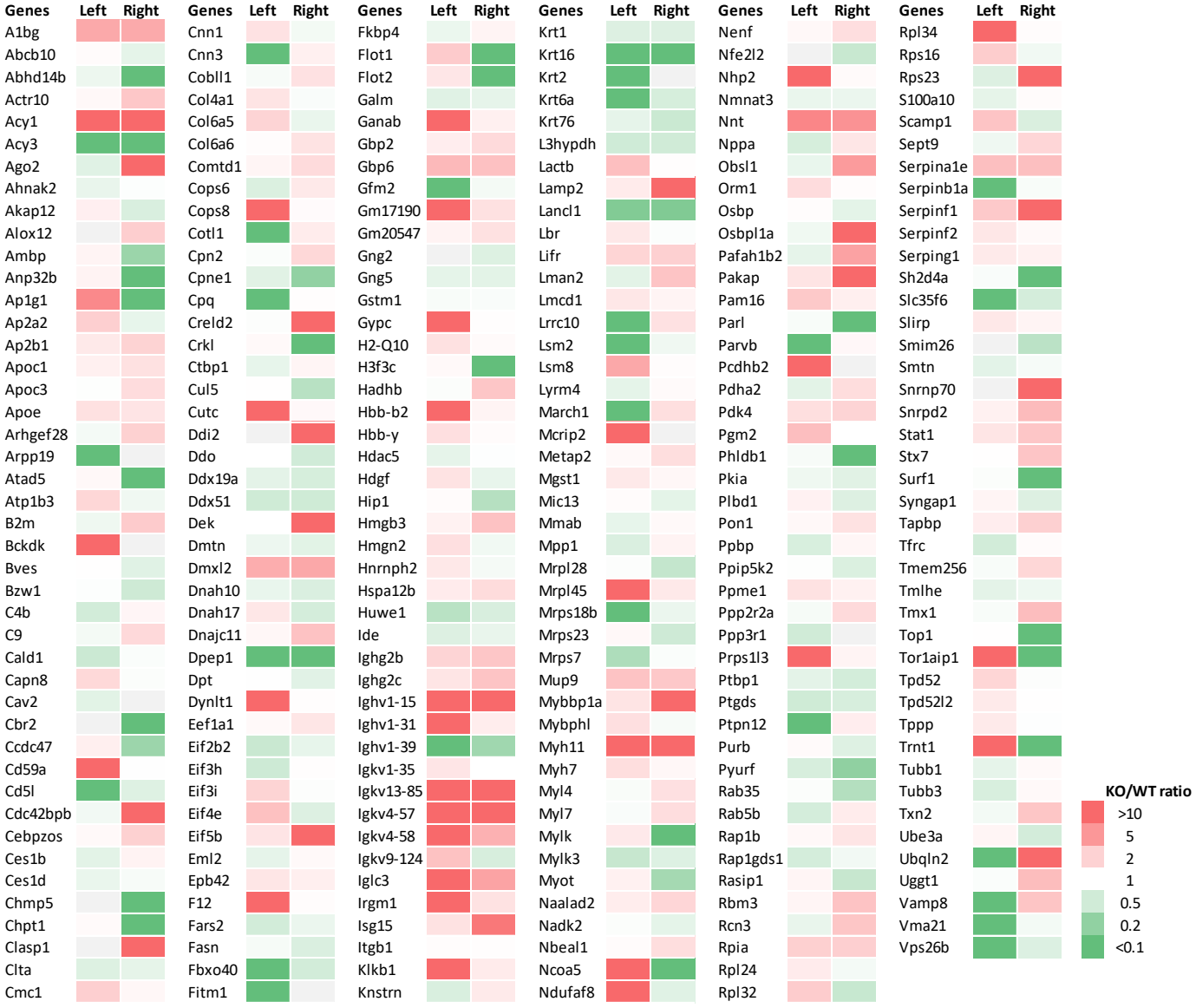


Supplemental Figure 5. Multivariate analysis and hierarchical clustering displays metabolite differences between WT LV (dark purple) and RV (light purple).

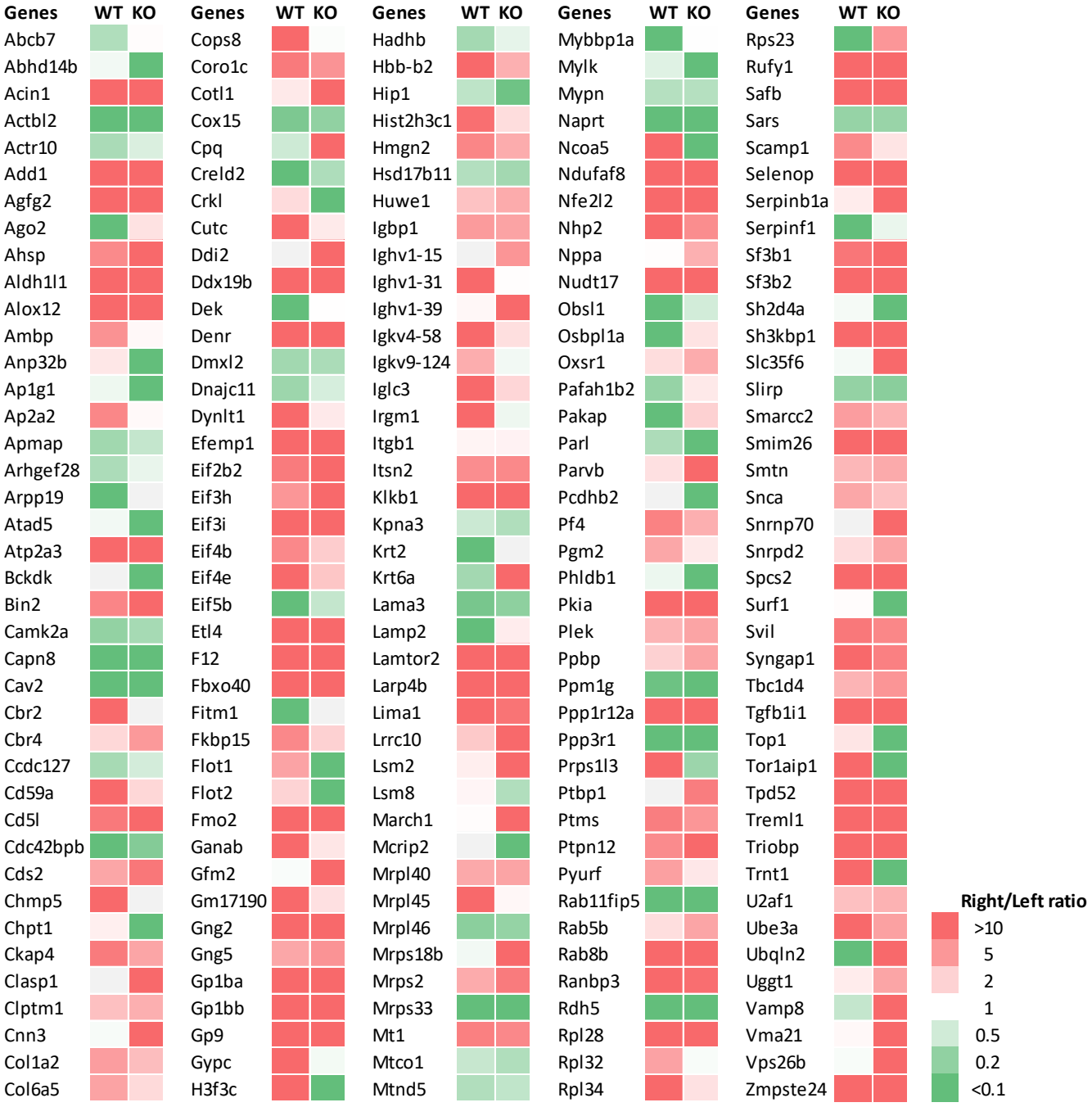
A. PLS-DA plot R2=0.53. Q2=0.07. N=5 per group. Each point represents a data set from an individual animal tissue. The 95% confidence intervals are indicated by elliptical patterns per group.

B. PCA plot. PCA displayed a total of 71.2% variance, attributed to PC1 (55.3%) and PC2 (15.9%) components. The 95% confidence intervals are indicated by elliptical pattens per roup.

C. Heatmap displaying the top 25 metaoblites based on t-test/ANOVA, Euclidean distancing, and Ward clustering.



Supplementary Figure 6. Expression of proteins most changed in either left or right ventricles of *Rbp1*$^{-/-}$ mice compared to WT mice. Minimum 2-fold change of expression and FDR adjusted p-value <0.05 were criteria for inclusion.



Supplementary Figure 7. Expression of proteins most changed in left vs. right ventricle in either *Rbp1*$^{-/-}$ or WT mice. Minimum 2-fold change of expression and FDR adjusted p-value <0.05 were criteria for inclusion.