

Supplementary Materials: Exercise-Induced Alterations in Skeletal Muscle, Heart, Liver, and Serum Metabolome Identified by Non-Targeted Metabolomics Analysis

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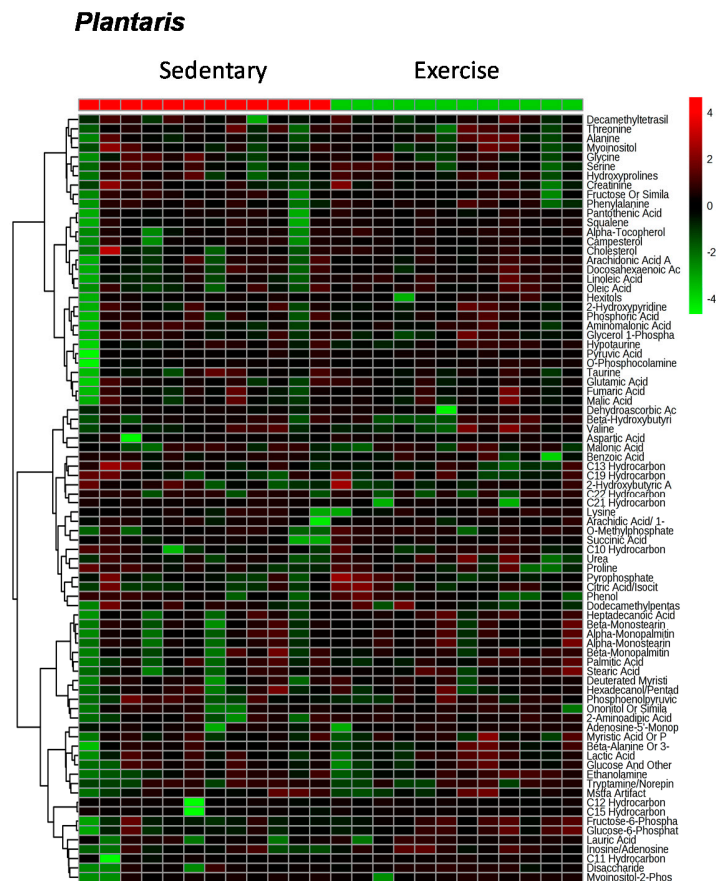


Figure S1. Non-targeted metabolomics analysis of exercise-trained and sedentary control rat plantaris muscle. Heatmap of metabolites identified by GC-MS in the heart. $N = 12/\text{group}$.

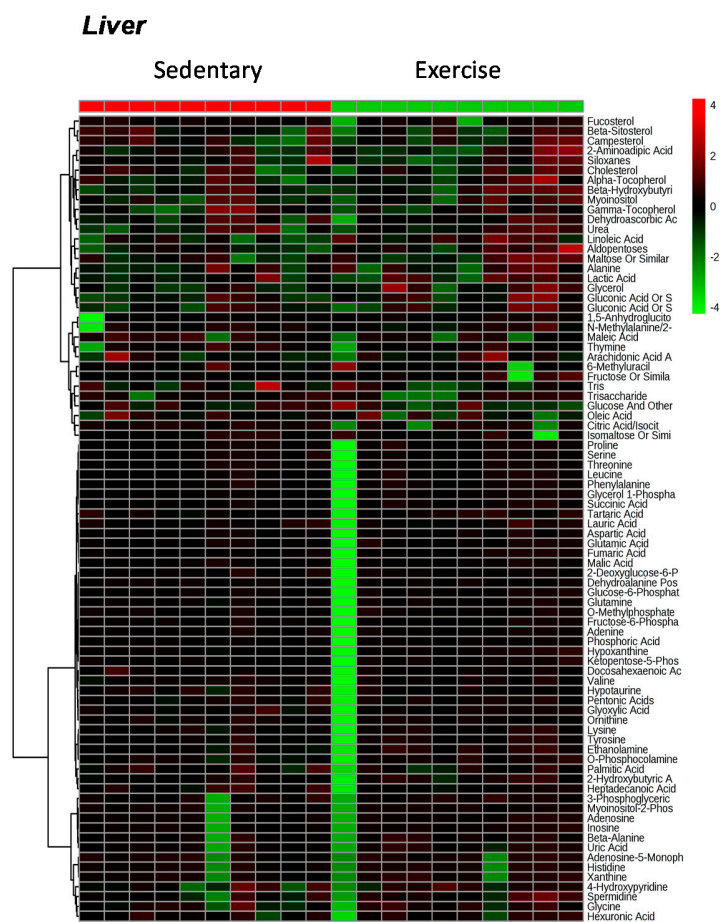


Figure S2. Non-targeted metabolomics analysis of exercise-trained and sedentary control rat liver. Heatmap of metabolites identified by GC-MS in the heart. $N = 12/\text{group}$.

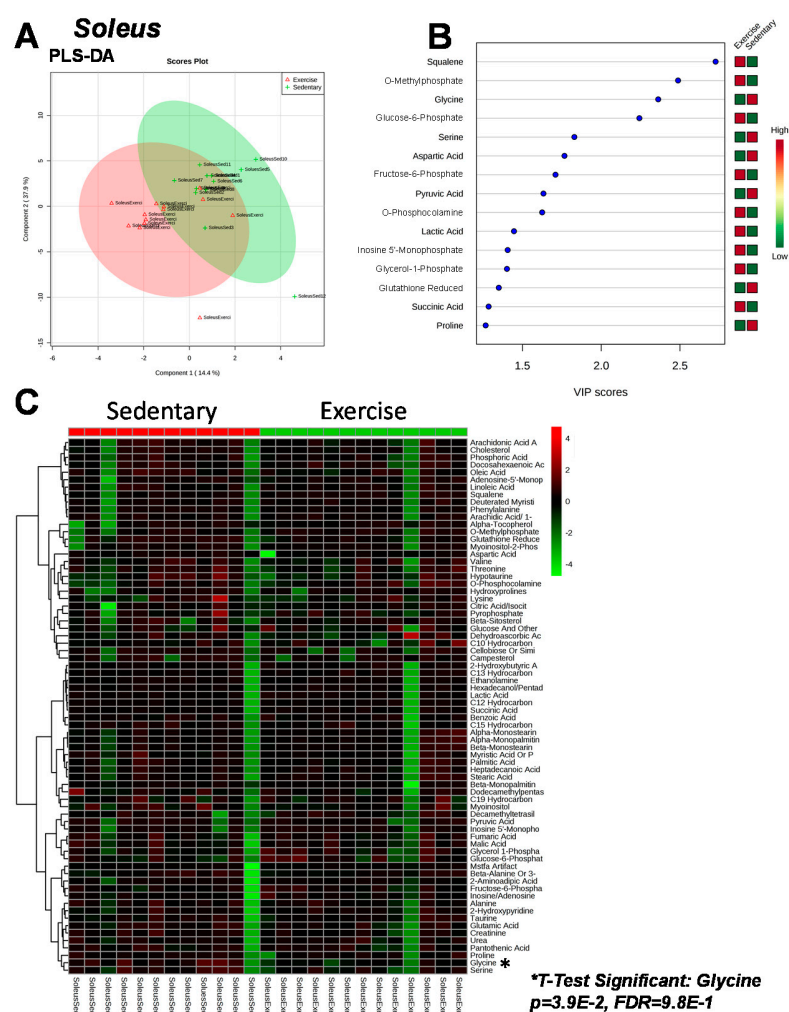


Figure S3. Non-targeted metabolomics analysis of exercise-trained and sedentary control rat soleus muscle. **(A)** Principal components analysis using PLS-DA. **(B)** Variable importance in projection (VIP) scores. **(C)** Heatmap of metabolites identified by GC-MS in the heart. * $P < 0.05$. $N = 12/\text{group}$.

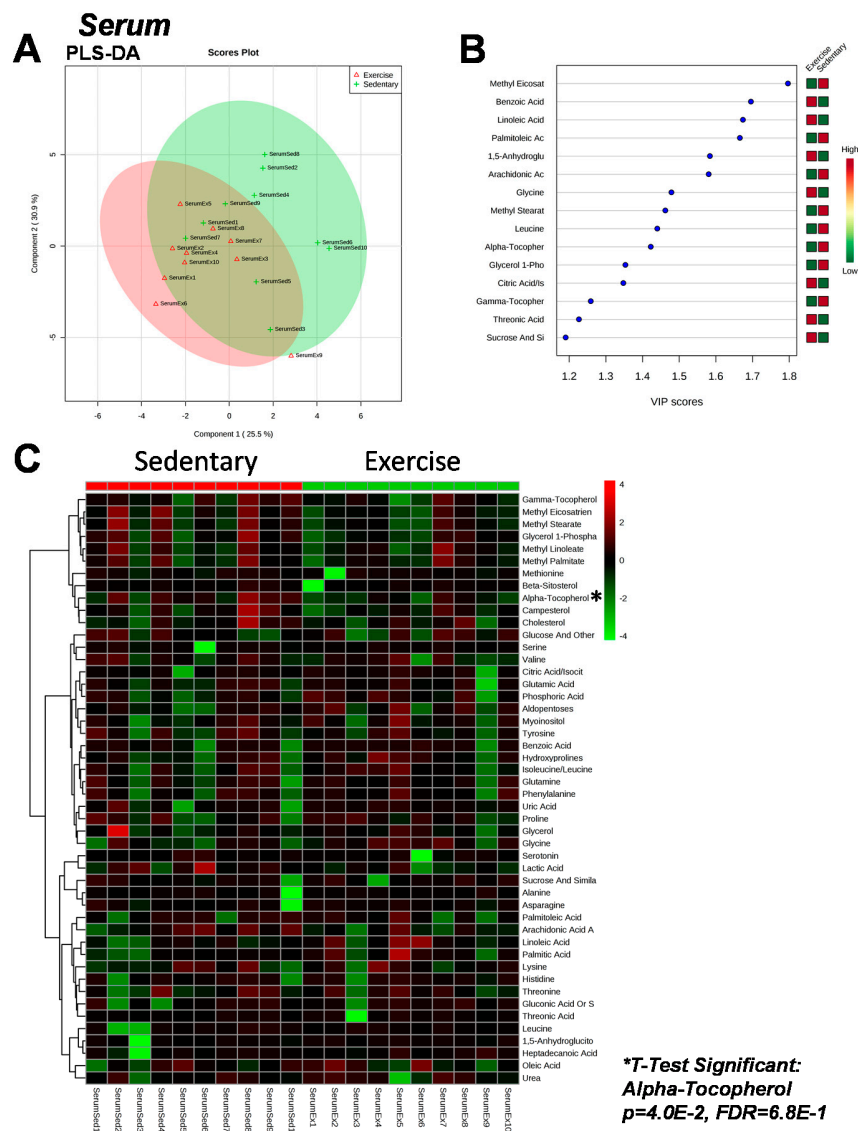


Figure S4. Non-targeted metabolomics analysis of exercise-trained and sedentary control rat serum. (A) Principal components analysis using PLS-DA. (B) Variable importance in projection (VIP) scores. (C) Heatmap of metabolites identified by GC-MS in the heart. * $P < 0.05$. $N = 12/\text{group}$.

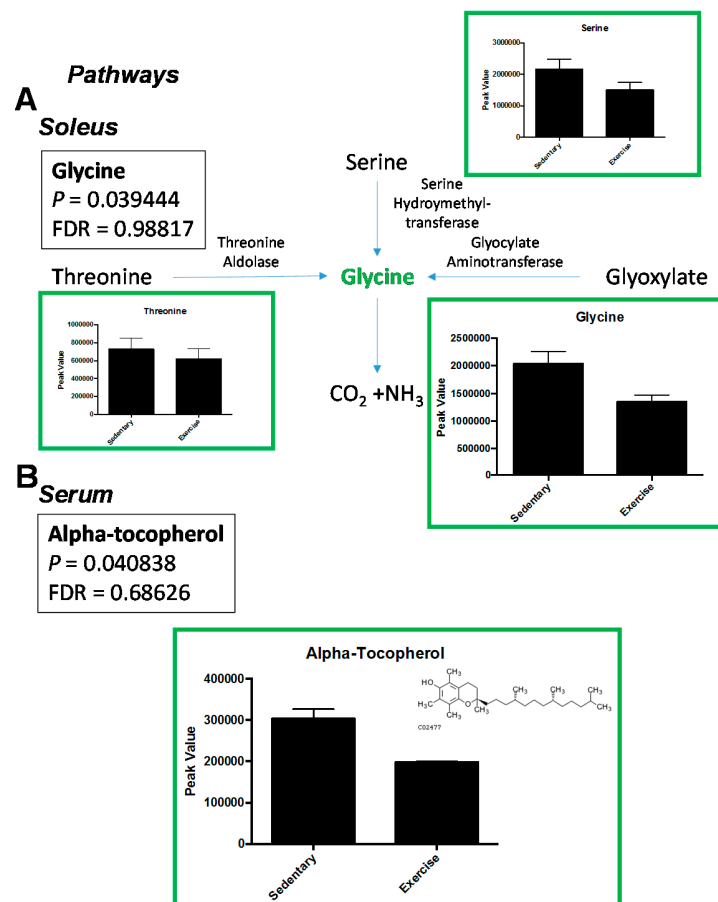


Figure S5. Pathway analysis of *t*-test significant metabolites in exercise-trained soleus muscle and serum. (A) Alterations in soleus muscle glycine (and other non-significant identified metabolites) identified in the pathway. (B) Alterations in serum alpha-tocopherol. Data represent mean \pm SEM. * $P < 0.05$. $N = 12$ /group.

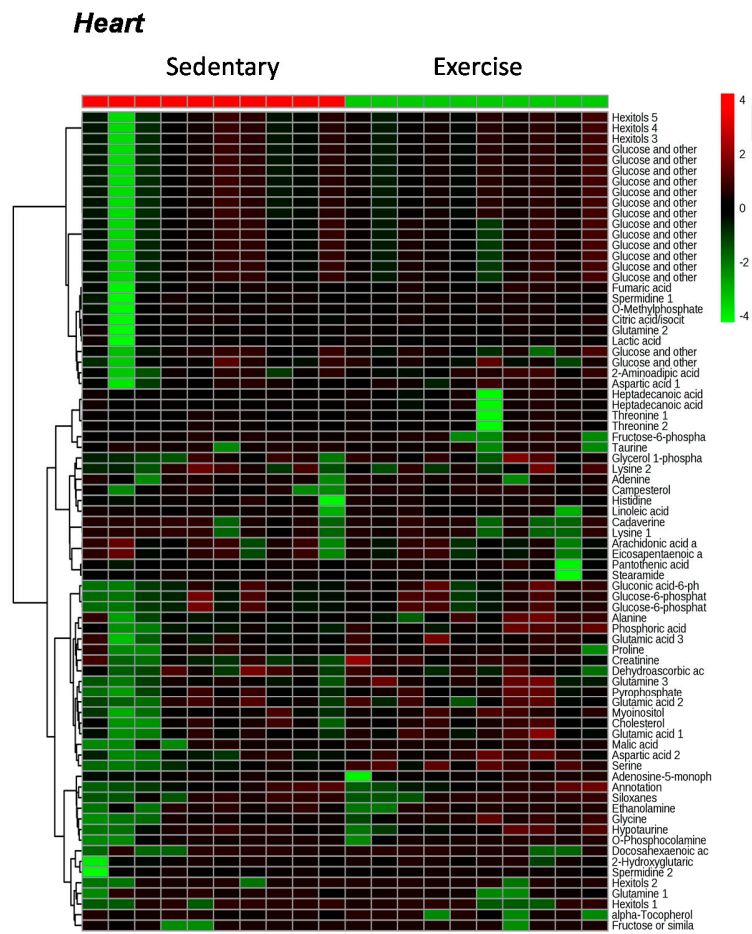


Figure S6. Non-targeted metabolomics analysis of exercise-trained and sedentary control rat heart. Heatmap of metabolites identified by GC-MS in the heart. $N = 12/\text{group}$.

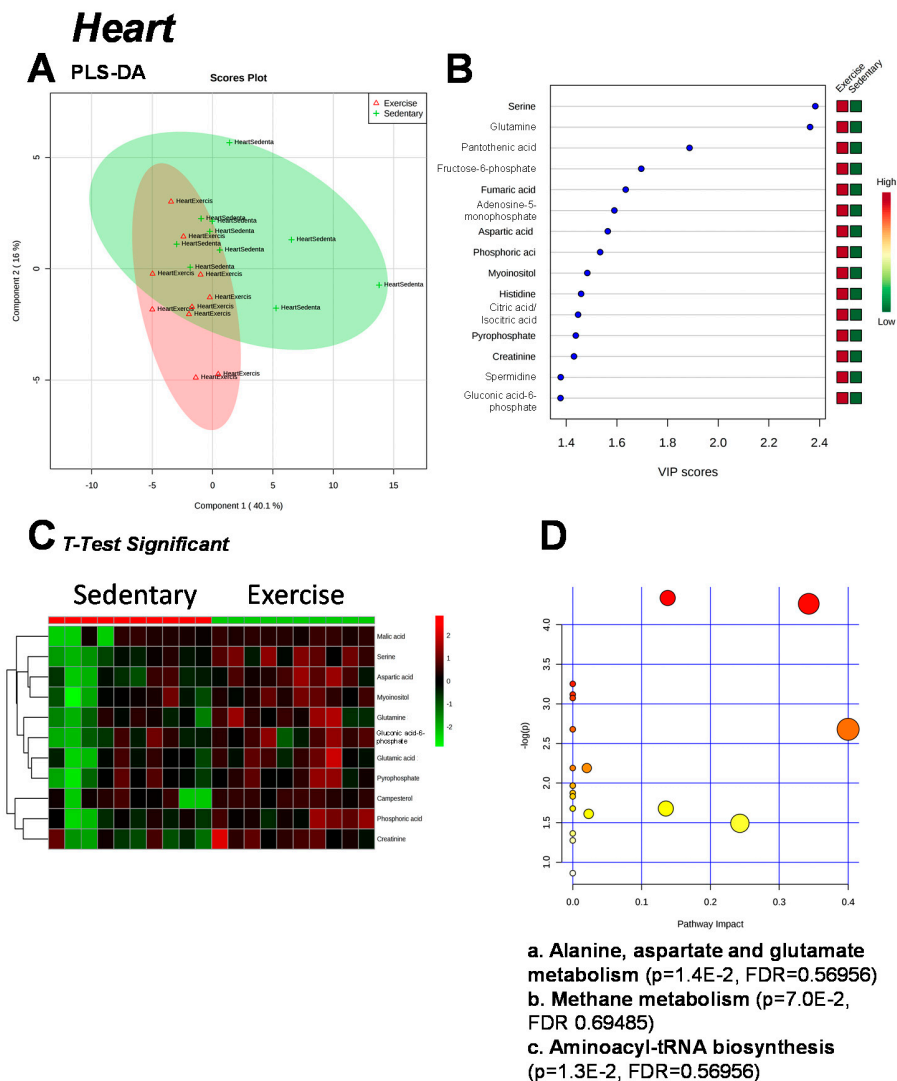


Figure S7. Non-targeted metabolomics analysis of exercise-trained and sedentary control rat heart. (A) Principal components analysis using PLS-DA. (B) Variable importance in projection (VIP) scores. (C) *t*-Test significant heatmap of metabolites identified by GC-MS in the heart. (D) Pathway analysis using *t*-test significant metabolites identifying alanine, aspartate, and glutamate metabolism as highly enriched. * $P < 0.05$. $N = 12$ /group.

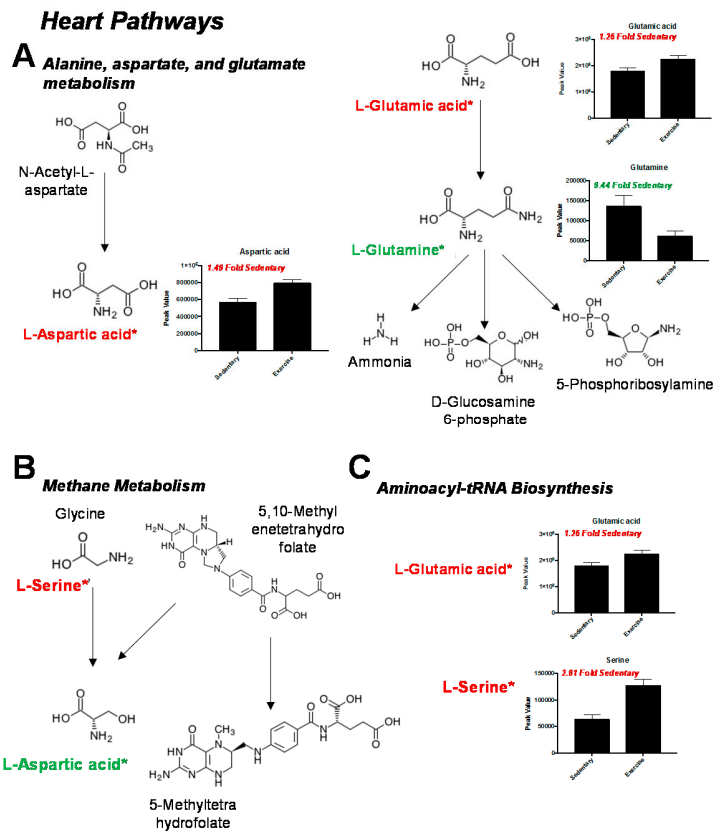
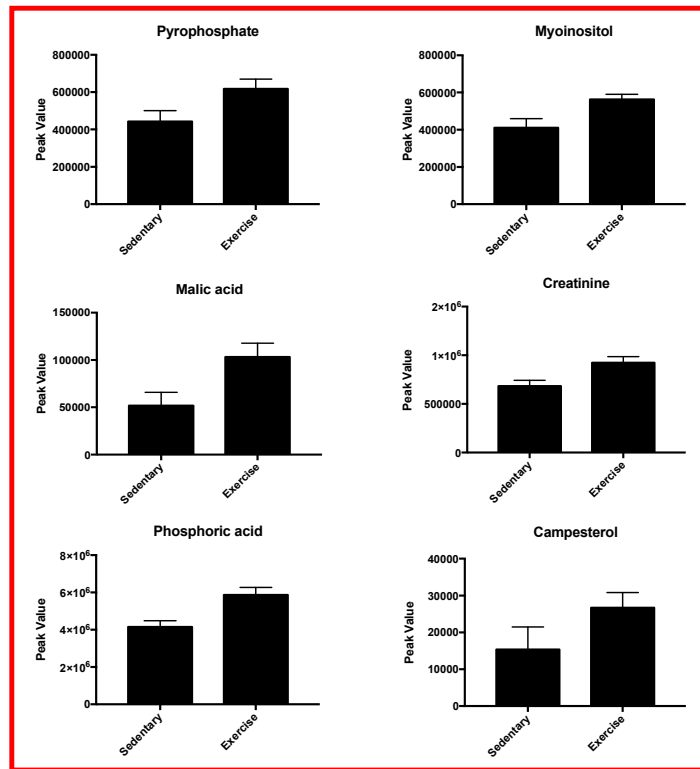


Figure S8. Pathway analysis of t-test significant metabolites identified by GC-MS in exercise-trained heart. (A) Alanine, aspartate, and glutamate metabolism. (B) Methane metabolism. (C) Aminoacyl-tRNA Biosynthesis. Data represent mean \pm SEM. * $P < 0.05$. $N = 12/\text{group}$.

Heart



Increased*
Decreased*

Figure S9. *t*-Test significant metabolites from heart. Data represent mean \pm SEM. * $P < 0.05$. $N = 12/\text{group}$.