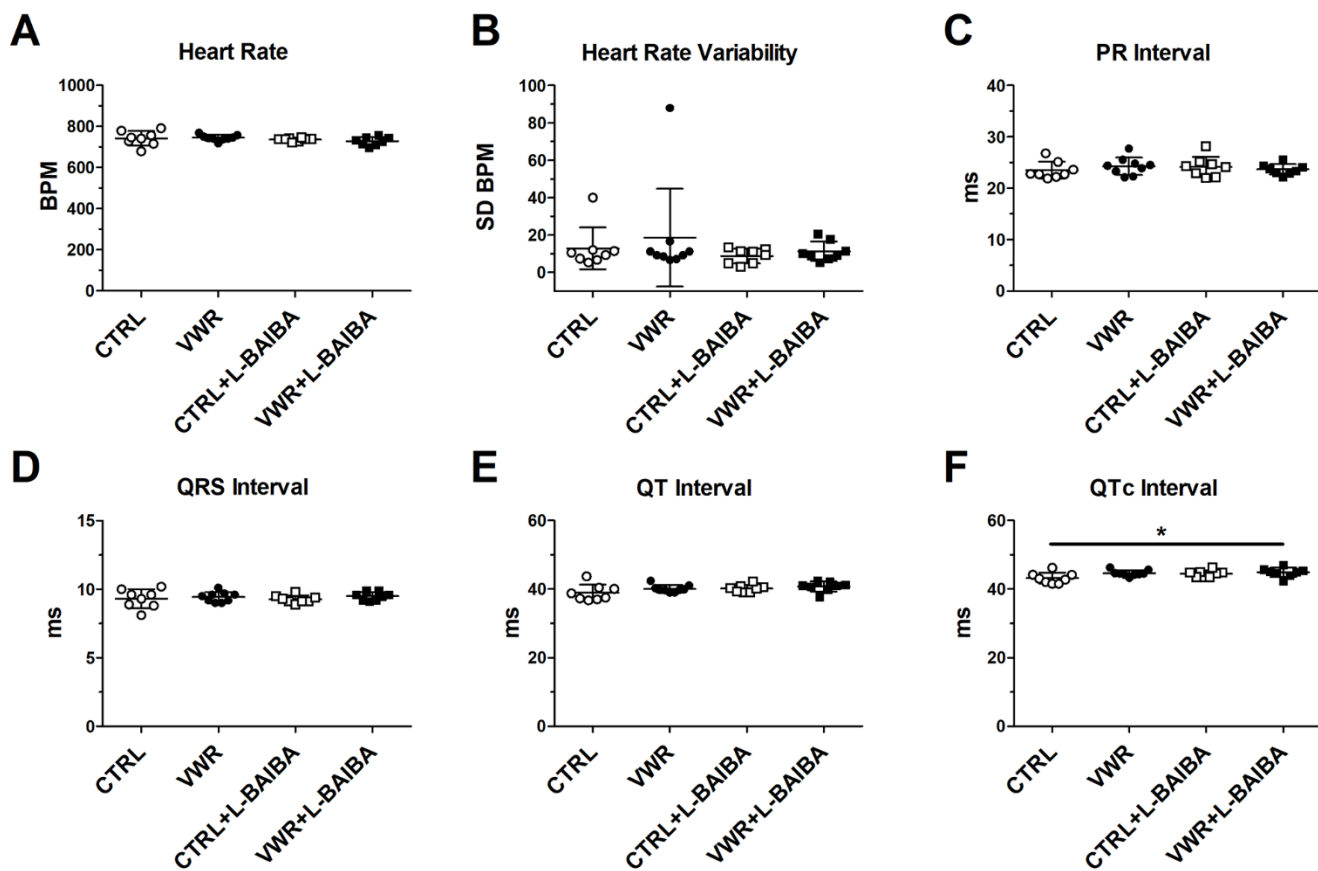
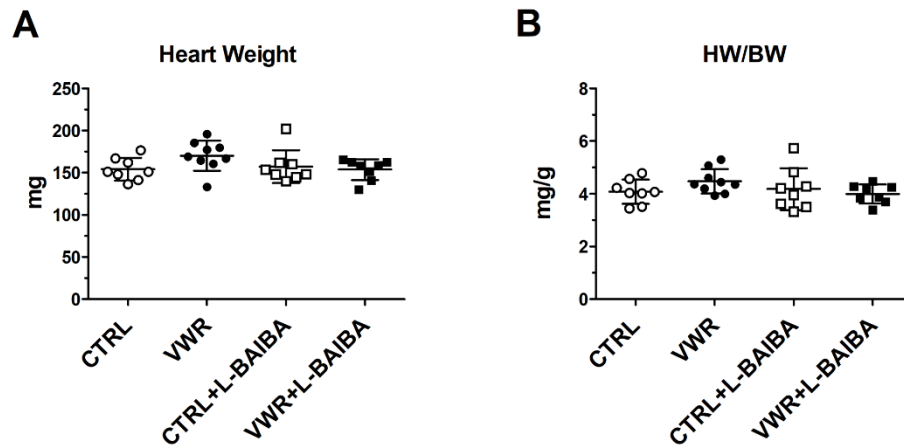


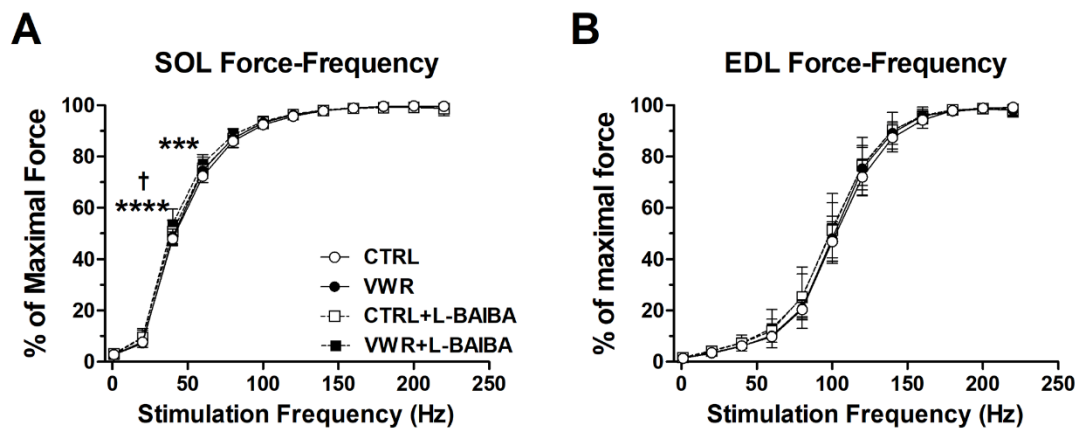
SUPPLEMENTARY FIGURES



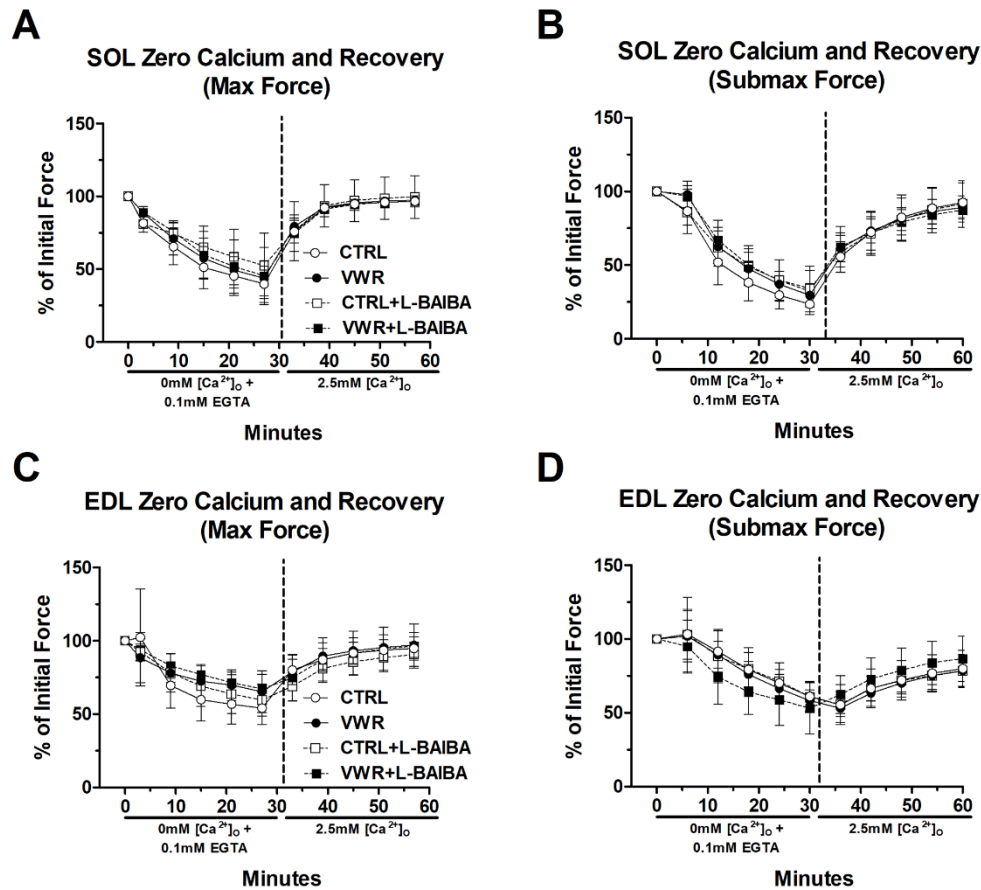
Supplementary Figure 1. Heart ECG properties after the three-month intervention period. Conscious ECG properties including (A) resting heart rate in beats per minute (BPM), (B) heart rate variability as measured by standard deviation of the heart rate (SD BPM), (C) PR interval, (D) QRS interval, (E) QT interval, and (F) QT interval corrected for heart rate (QTc interval). * $p < 0.05$, One-way ANOVA. $n = 7$ CTRL, $n = 8$ VWR, $n = 8$ CTRL+L-BAIBA, $n = 8$ VWR+L-BAIBA. Mean $\pm$ SD.



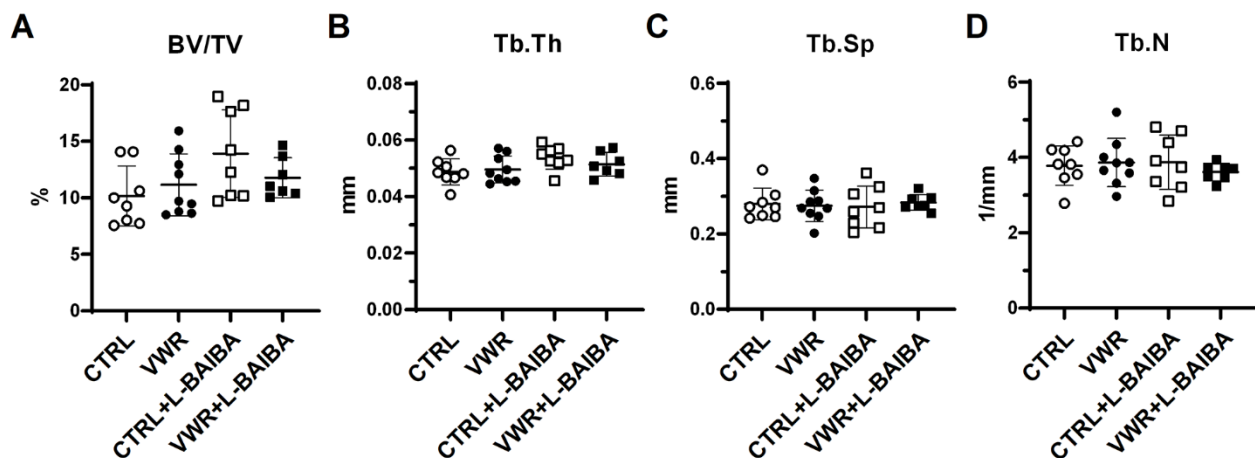
Supplementary Figure 2. Heart size after the three-month intervention period. (A) Average heart weight and (B) heart weight to body weight ratio (HW/BW). One-way ANOVA, $p > 0.05$. $n = 8$ CTRL, $n = 9$ VWR, $n = 8$ CTRL+L-BAIBA, $n = 8$ VWR+L-BAIBA. Mean $\pm$ SD.



Supplementary Figure 3. *Ex vivo* muscle force-frequency after the three-month intervention period. Force-frequency relationships for soleus muscle (SOL) (A) and EDL muscle (B) expressed as a percentage of maximal force. **** $p < 0.0001$, *** $p < 0.01$ CTRL vs. VWR+L-BAIBA; $\dagger p < 0.001$ VWR vs. VWR+L-BAIBA, two-way ANOVA with Bonferroni. $n = 8$ CTRL, $n = 9$ VWR, $n = 8$ CTRL+L-BAIBA, $n = 8$ VWR+L-BAIBA. Mean $\pm$ SD.



Supplementary Figure 4. Muscle dependence upon extracellular calcium for *ex vivo* contractility after the three-month intervention period. Contractile force production in buffer containing 0 mM Ca^{2+} and after restoration to normal Ca^{2+} levels in soleus (SOL) muscle at maximal force (A) and submaximal force (B), and in EDL muscle at maximal force (C) and submaximal force (D). Data is expressed as a percentage of initial force at baseline before 0 mM Ca^{2+} . Two-way ANOVA, $p > 0.05$. $n = 8$ CTRL, $n = 9$ VWR, $n = 8$ CTRL+L-BAIBA, $n = 8$ VWR+L-BAIBA. Mean $\pm$ SD.



Supplementary Figure 5. Baseline μCT analysis of tibia trabecular bone parameters. (A) Trabecular bone volume fraction (BV/TV), (B) trabecular bone thickness, (C) trabecular bone separation, and (D) trabecular bone number, measured at baseline prior to the beginning of the study. One-way ANOVA, $p > 0.05$. $n = 8$ CTRL, $n = 9$ VWR, $n = 8$ CTRL+L-BAIBA, $n = 8$ VWR+L-BAIBA. Mean $\pm$ SD.