The CARM1 transcriptome and arginine methylproteome mediate skeletal muscle integrative biology

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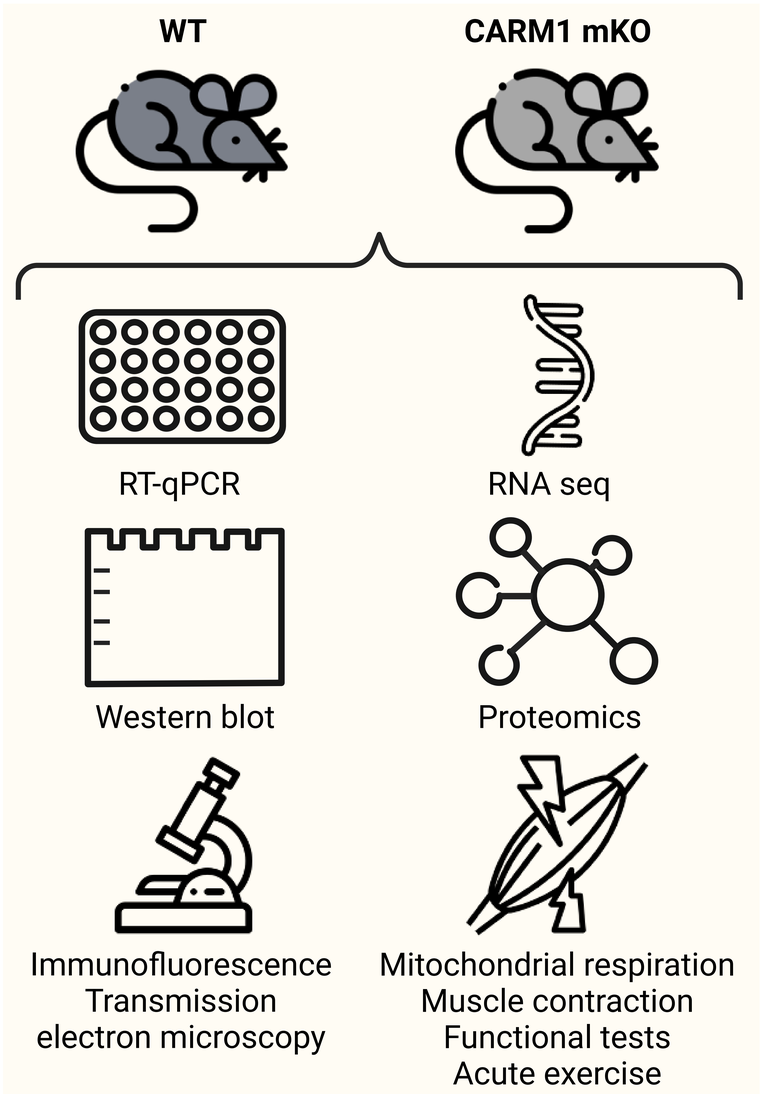
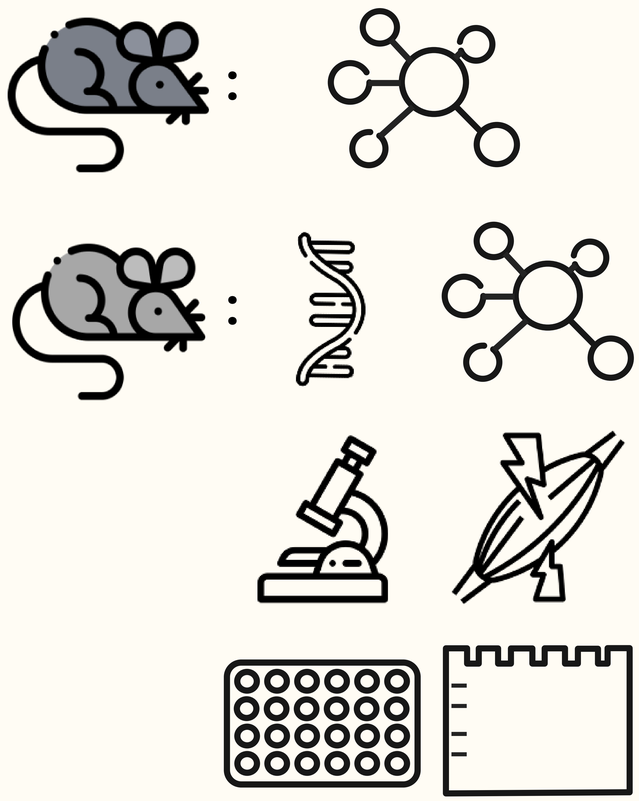
METHODS



RESULTS



Arginine methylation occurence is comparable to phosphorylation and ubiquitination.

CARM1 mKO mice displayed remodeled transcriptomic and proteomic signatures, including muscle contraction and atrophy.

Altered skeletal muscle contractile and NMJ characteristics, and decreased ability to exercise.

Attenuated exercise-induced gene expression of PGC-1a despite a preservation of upstream p-AMPK.

In **conclusion**, our findings assert an elevated prominence of arginine methylation in skeletal muscle, particularly that regulated by CARM1, as well as reveal the necessity for the methyltransferase to maintain and remodel muscle homeostasis.