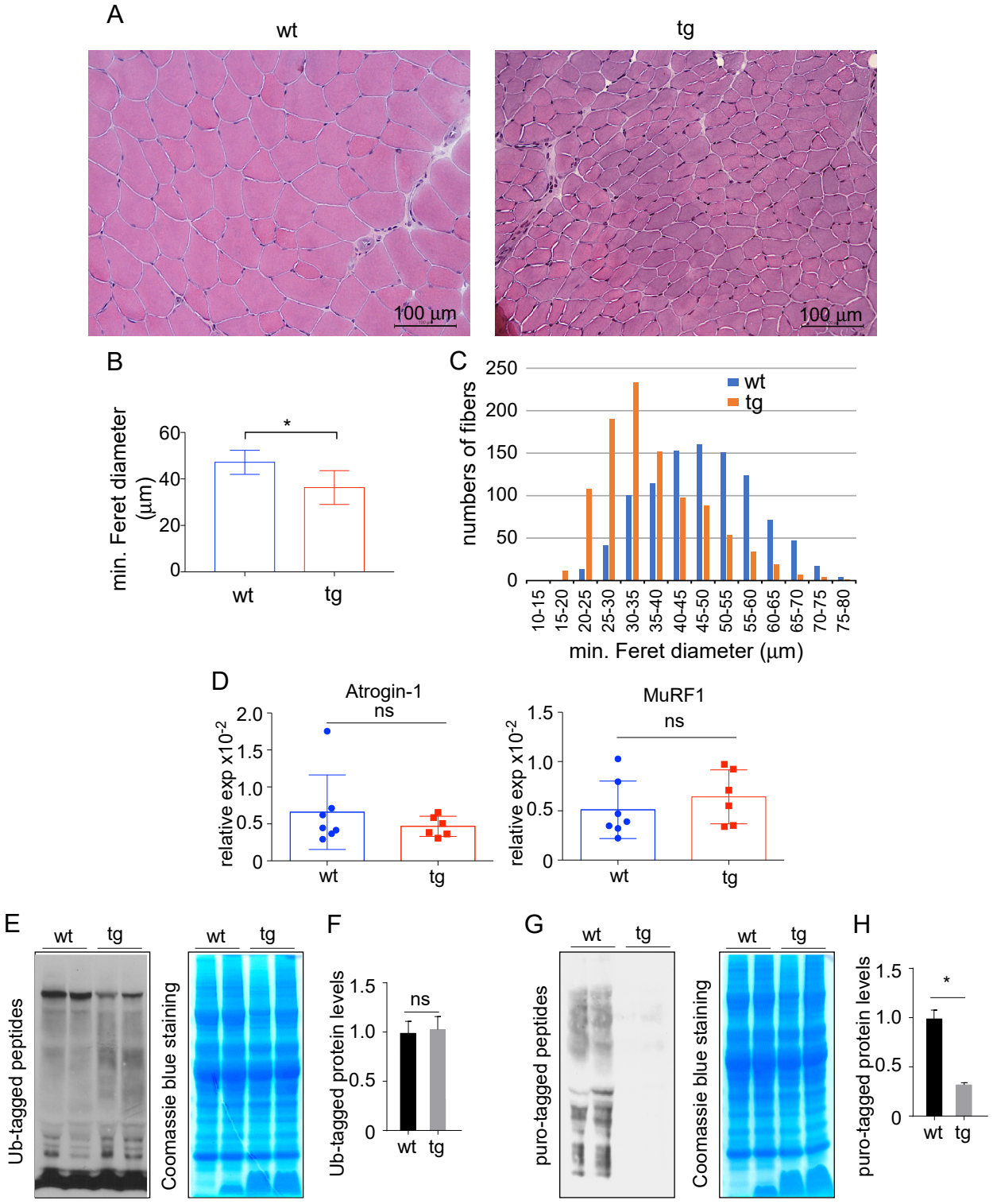
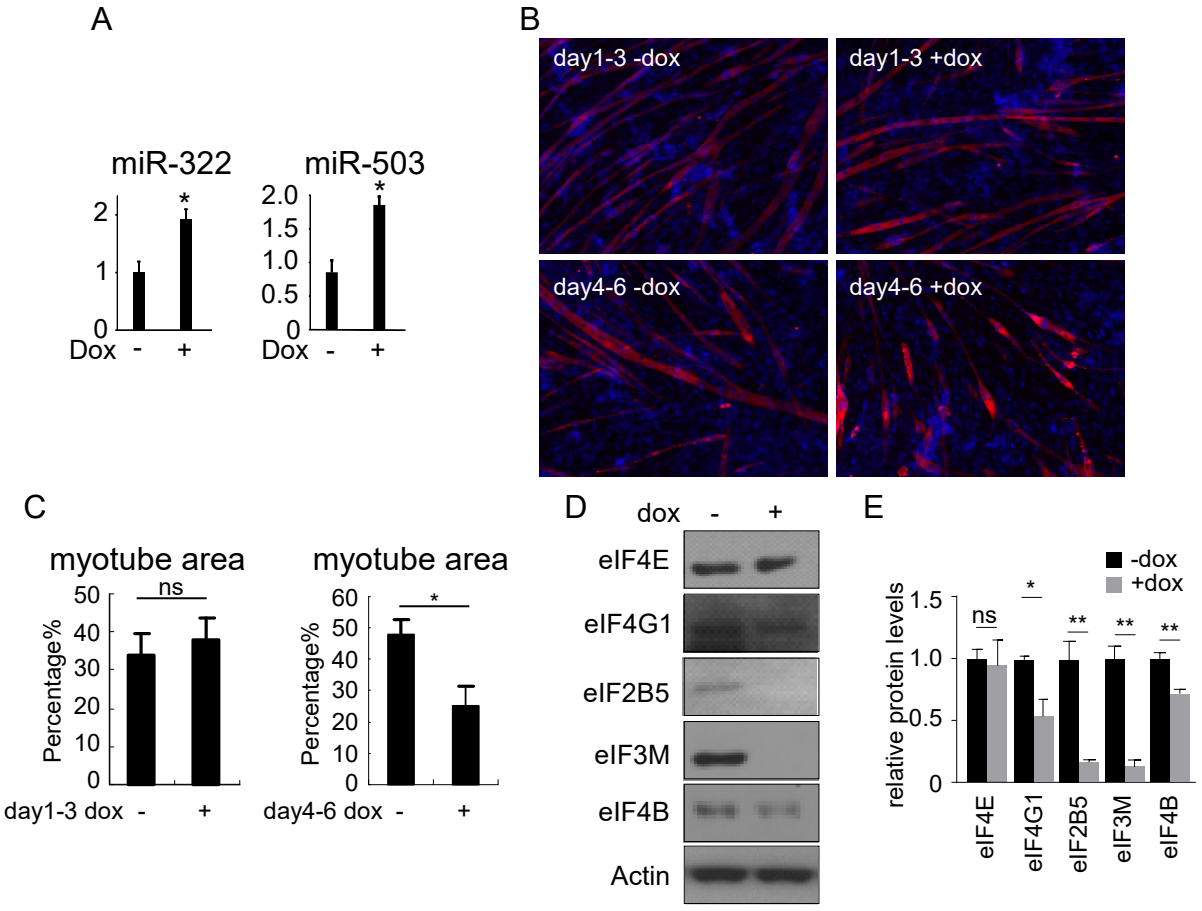
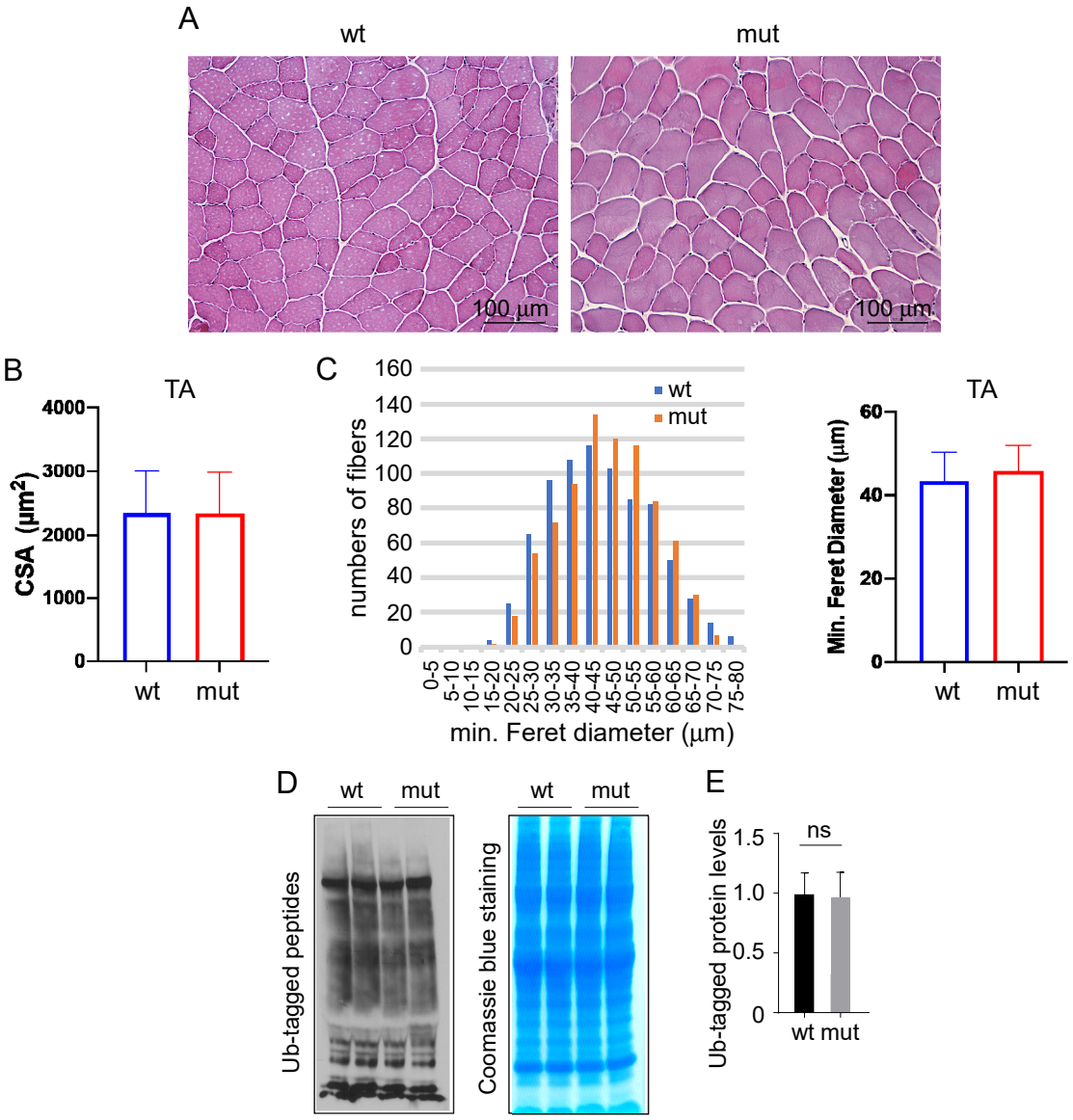


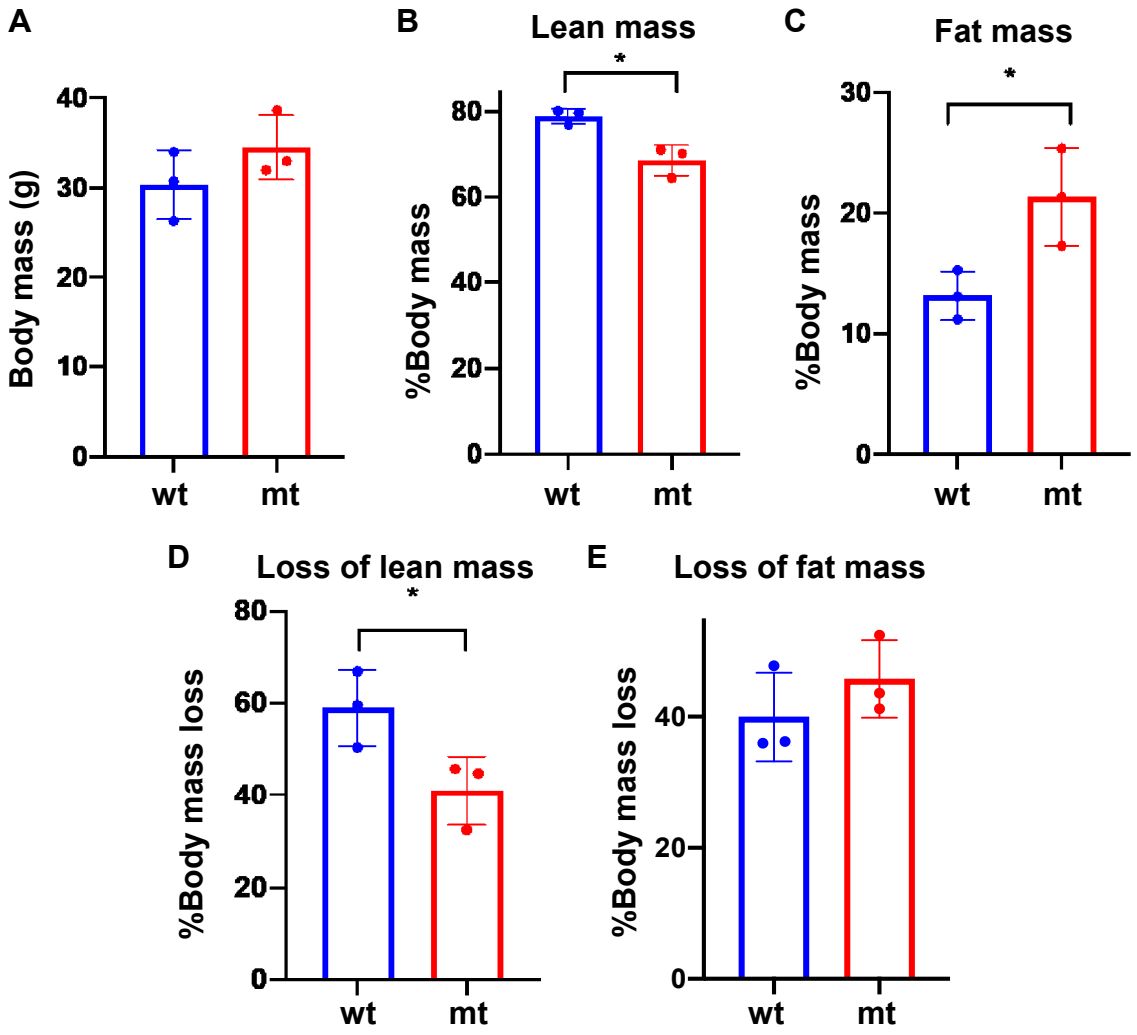
Supplemental Fig. S1. Histological and molecular analyses of MCK-miR-322/-503 muscles. (A) H&E staining of TA muscle sections. Scale bar, 100 µm. (B) Tg muscles had smaller mean min. Ferret diameters (n=5 vs. 5). *, p<0.05. (C) Frequency histogram of min. Ferret diameters (n=5 vs. 5). (D) Expression levels of E3 ubiquitin ligases Atrogin-1 and MuRF1 in tg vs. control muscles (n=7 vs. 6). ns, not significant. (E) Measurement of levels of Ub-tagged peptides by western blot. Coomassie blue staining serves as loading control. (F) Quantification of levels of ubiquitin-tagged peptides (n=4 vs. 4). ns, not significant. (G) Measurement of levels of puromycin-tagged peptides by western blot. Coomassie blue staining serves as loading control. (H) Quantification of levels of puro-tagged peptides (n=4 vs. 4). *, p<0.05.



Supplemental Fig. S2. miR-322/-503 overexpression induces myotube atrophy. (A) Dox induced ~2 folds of miR-322 and miR-503 expression in a tet-on temporal expression system in C2C12 cells. (B) Micrographs of C2C12-derived myotubes with induced expression of miR-322 and miR-503 at day 1-3 and day 4-6 of differentiation. (C) Quantification of myotube areas in miR-322/-503-overexpressing cells. (D) Analyses of eIF protein expression in miR-322/-503-overexpressing myotubes. (E) Quantification of protein levels of eIFs in miR-322/-503-overexpressing myotubes (n=3 vs. 3).



Supplemental Fig. S3. Histological and molecular analyses of muscles from H19X mutant mice. (A) H&E staining of H19X mutant muscle sections. Scale bar, 100 µm. (B) Quantification of mean CSA in TA muscles (n=5 vs. 5). (C) Frequency histogram and mean of min. Ferret diameters (n=5 vs. 5). (D) Measurement of levels of ubiquitin-tagged peptides by western blot. Coomassie blue staining serves as loading control. (E) Quantification of levels of ubiquitin-tagged peptides (n=4 vs. 4). ns, not significant.



Supplemental Fig. S4. Body composition analyses of H19X mutant mice before and after starvation. (A) Body mass of 6-month wild-type and mutant mice at baseline. (B) Lean mass content is less in mutant mice. *, $p<0.05$. (C) Fat mass is greater in mutant mice. *, $p<0.05$. (D) The loss of lean mass is less in mutant mice after 48h starvation. *, $p<0.05$. (E) The loss of fat mass is greater in mutant mice after 48h starvation. N=3 in each group. wt, wild-type; mt, mutant.