

Fig. S1. Increased apoptosis in *Dicer* mutant skeletal muscle. (A) TUNEL analysis of E13.5 and 14.5 control and mutant littermate distal forelimb cross sections. Arrowheads point to TUNEL positive nuclei within skeletal muscles. TUNEL positive nuclei without arrowheads are positioned outside of skeletal muscle masses and were not included in the quantification in Fig.6. Inset shows blowup of one arrowhead and a TUNEL positive nucleus. Scale bars equal 100 μ m.

Fig. S2. Flow cytometric analysis of *Dicer* conditional MDER (- Cre) and Cre-infected *Dicer* conditional MDER (+ Cre) cells. Cells were cultured in DM with or without β -estradiol for 24 hours, as indicated. Cells were trypsinized and stained with Annexin V-FITC and propidium iodide using the Annexin V-FITC Apoptosis Detection Kit (BioVision) per manufacturer's instructions. As a positive control for apoptosis and to define gating parameters, cells were treated in parallel with 50 μ M geldanamycin in GM for 24 hours prior to analysis. Cells were sorted and quantified by FACS. Shown are representative panels from one of three independent trials.

Fig. S3. *Dicer* mutants show aberrant expression of myogenic factors. Immunoblot analysis of E18.5 control (n=3) and mutant (n=3) tongue extracts with antibodies specific for MyoD, Myogenin, myosin heavy chain fast isoform and desmin. Gapdh was the loading control.