SUPPLEMENTAL FIGURE LEGENDS

SOM Figure 1. Purity of FACS sorted cells in uninjured and injured muscle.

(**A**) Representative FACS plots from cells isolated from TA muscles and stained with anit-Syndecan-4-APC, anti-CD31-FITC, and anti-CD45-FITC antibodies (right panel). Unstained cells shown on left panel were used to set positive selection gate, indicated by the bracketed area. $Syn4^{+}/CD31^{-}/CD45^{-}$ were collected and used for further study of myogenic cells. (**B**) A fraction of cells (n=2000) from the positive selected gate (panel A) were analyzed by immunohistochemistry immediately after sorting. Cells from uninjured muscle were ~97% myogenic based on expression of Pax7 and cells from injured muscle were also ~97% myogenic based on expression of both Pax7 and MyoD. DAPI stains all nuclei.

SOM Figure 2. *Myf5-Cre,ROSA26-βgal* is a read-out of the Myf5 lineage and the efficiency of Cre-mediated recombination in muscle satellite cells and their progeny

Single fibers were isolated from *Myf5-Cre,ROSA26-βgal* muscle. Some fibers were fixed and stained immediately. From other fibers, satellite cells were either stripped and fixed immediately or cultured for 3 days and then fixed. Cells were stained with X-gal (upper row) to detect recombination and gene excision. 100% of fibers, ~96% of satellite cells and ~97% of satellite cell progeny (myogenic progenitors) were positive for X-gal

reactivity. No X-gal reactivity was detected in muscle fibers or progenitors from control muscles (negative for Cre). DAPI stains all nuclei.

SOM Figure 3. siRNA against BCL9/9-2 decreases Fusion Index in primary myoblasts

Effect of exogenous DKK1 on BrdU incorporation in progenitors from single fibers isolated from control mice and incubated for 3 days in plating medium with various concentrations of DKK1 added for the final day. The percentage of $BrdU^+/Desmin^+$ cells was quantified. (* $p < 0.05$)