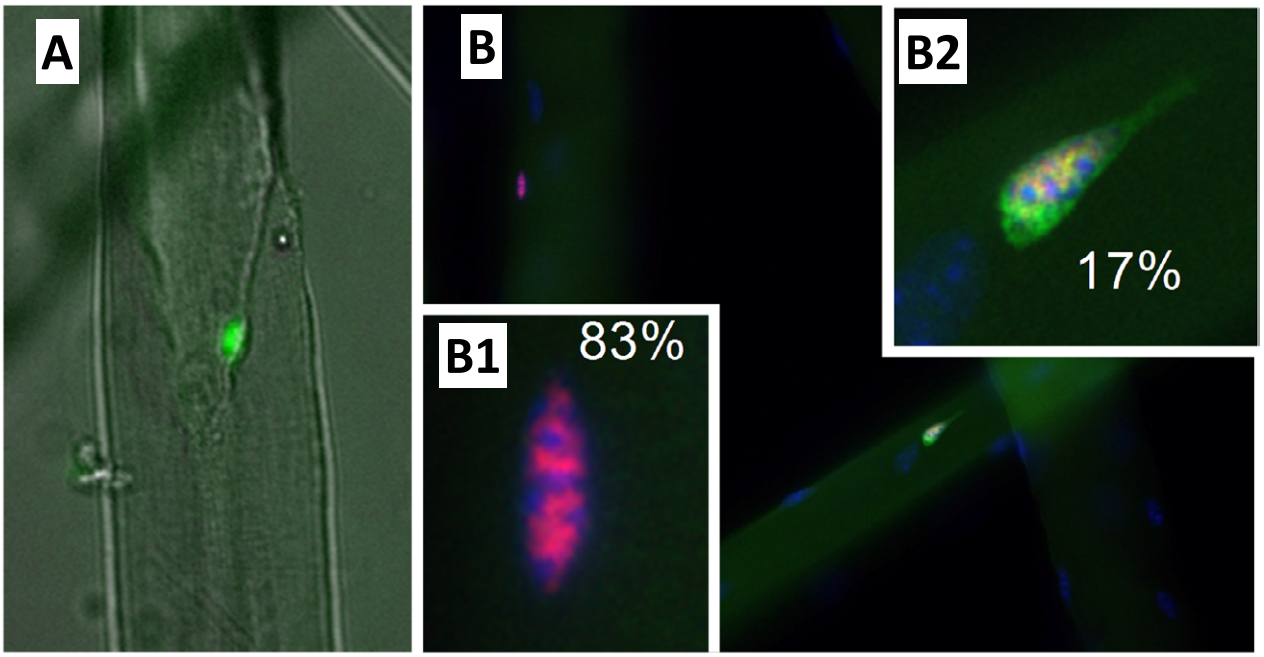
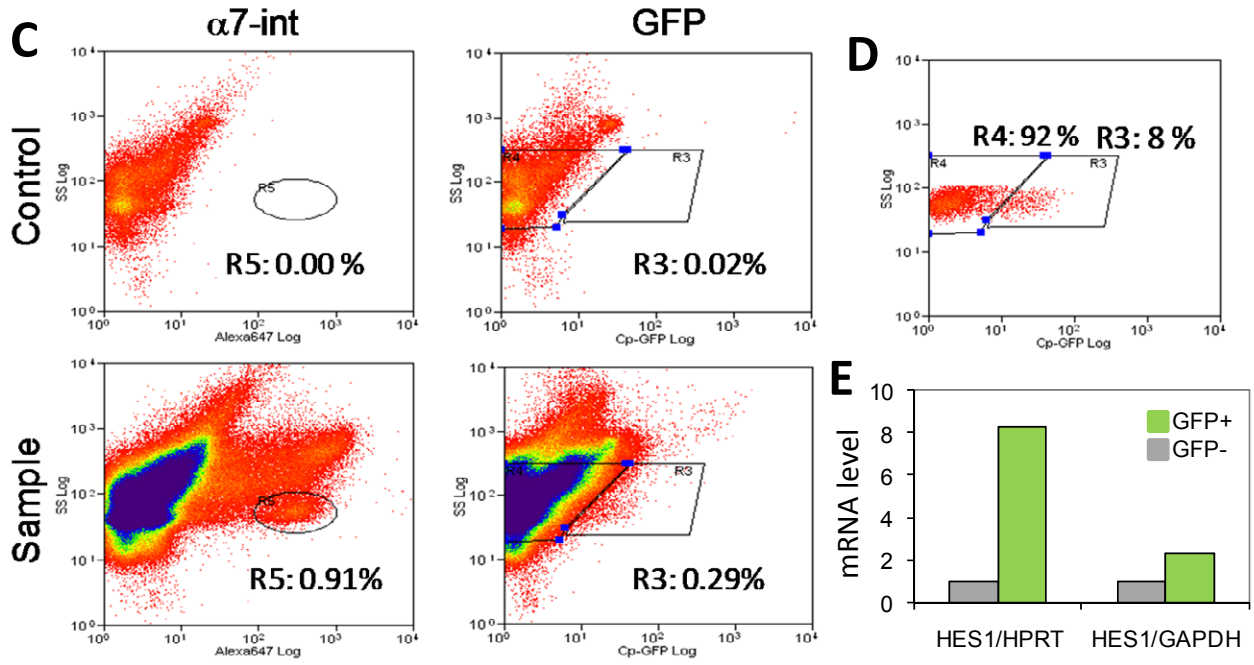

A
B
B1
83%
B2
17%


C
α7-int
GFP
Control
Sample
R5: 0.00 %
R3: 0.02%
R5: 0.91%
R3: 0.29%
SS Log
Alexa647 Log
Cp-GFP Log
D
R4: 92 %
R3: 8 %
E
mRNA level
GFP+
GFP-
HES1/HPRT
HES1/GAPDH

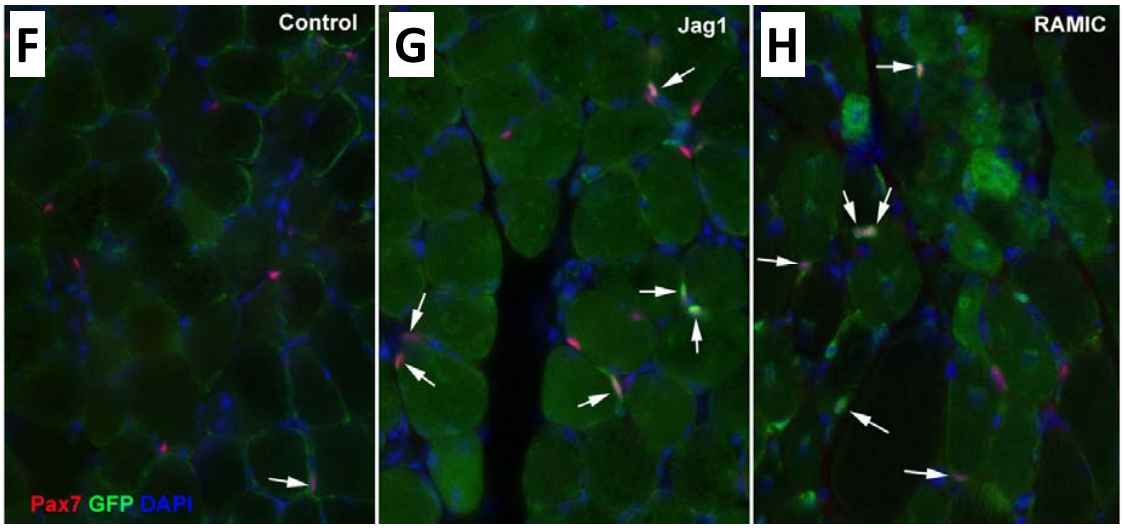
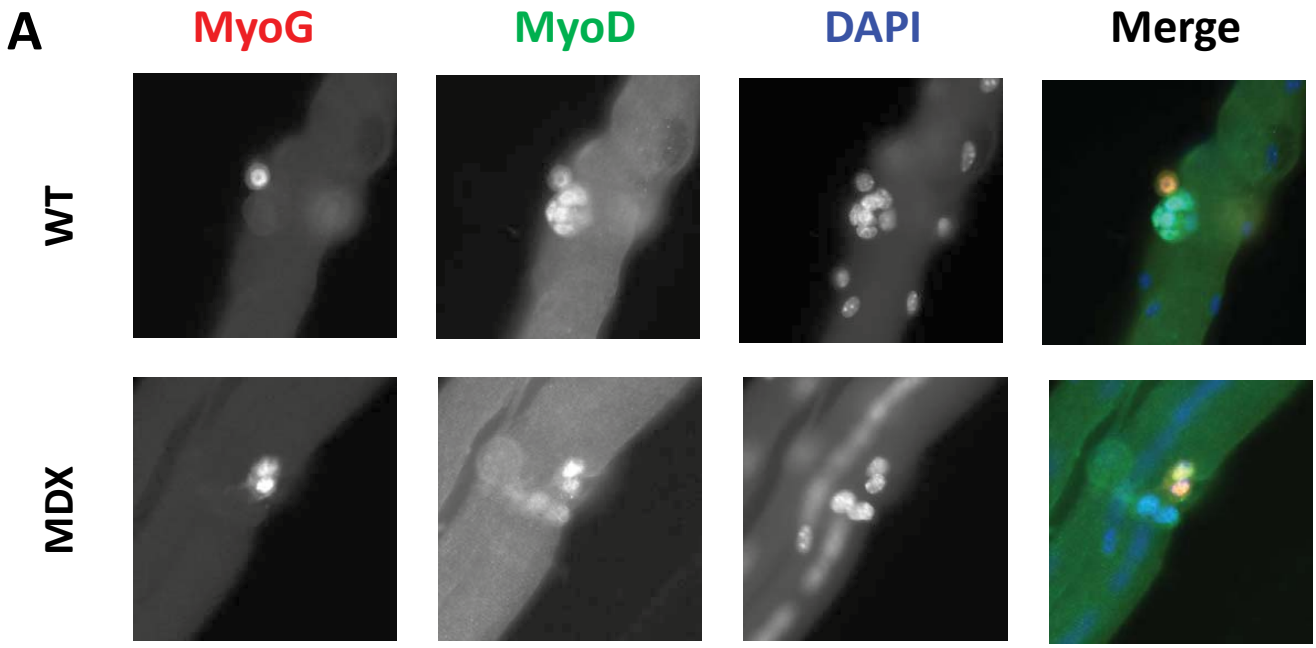

F
Control
G
Jag1
H
RAMIC
Pax7 GFP DAPI

Fig. S1. The Cp-GFP transgenic mouse is a faithful reporter of Notch signaling in satellite cells. (A) GFP signal in a putative satellite cell on a freshly isolated live EDL myofiber. (B) Double labeling with Pax7 (Red, satellite cell marker) and GFP (Green) indicates that 83% satellite cells ($Pax7^+$) are GFP^- (B1), but 17% are GFP+ (B2, n=102 cells counted from 3 mice). (C) Isolation of GFP^+ and GFP^- satellite cells from the Cp-GFP mouse by fluorescent activated cell sorting using a7-integrin as a positive selection marker. (D) Analysis of sorted a7-$integrin^+$ cells indicates that 8% of cells are GFP^+. (E) Realtime PCR analysis indicate that sorted GFP^+ satellite cells expressed higher levels of *Hes1*, a canonical target of Notch signaling. (F-H) Activation of Notch signaling turns on Cp-GFP in satellite cells in vivo. Shown are images of Pax7 and GFP staining in control (F), Jag1 overexpressing (G), and RAMIC (NICD) overexpressing (H) TA muscle sections 7 days after electroporation of plasmids encoding empty vector, Jag1 cDNA and NICD cDNA, respectively. Arrows point to $Pax7^+/GFP^+$ satellite cells.



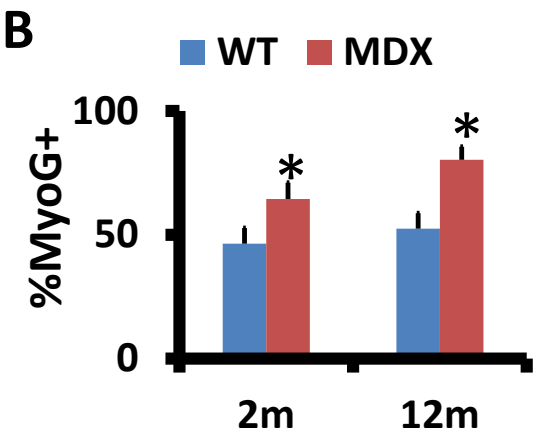


Fig. S2. *mdx* satellite cells have a higher tendency for terminal differentiation. (A) Representative images of satellite cell clusters from 2 and 12-months-old WT and *mdx* mice labeled with MyoG (red) and MyoD (green). Nuclei were counterstained with DAPI (blue). (B) Percentages of $MyoG^+$ cells per cluster at the indicated ages. Data were from 3 independent experiments with at least 20 clusters analyzed in each experiment. Error bars represent s.e.m. *P<0.05.

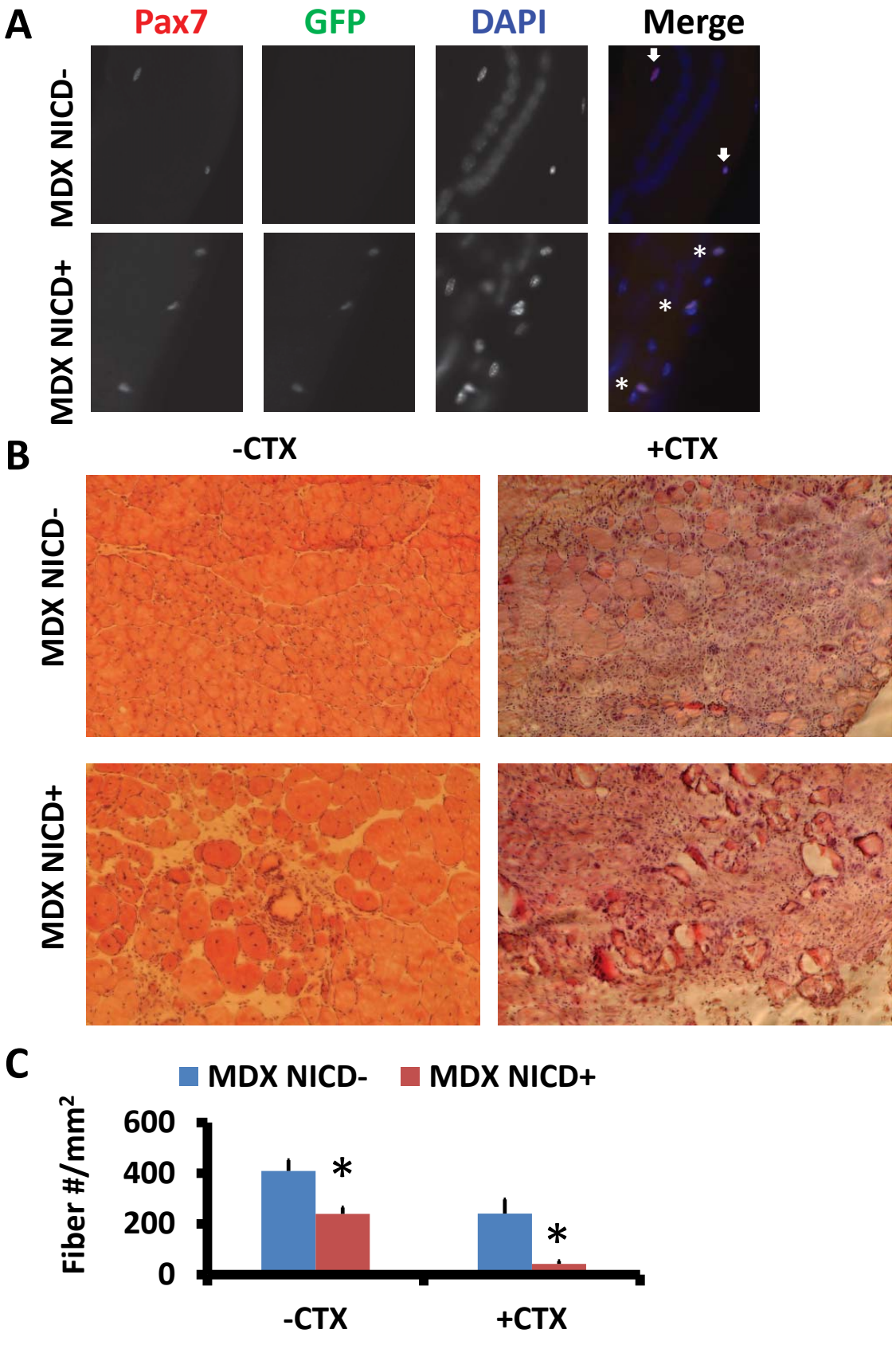


Fig. S3. Constitutive activation of Notch in *mdx* satellite cells fail to improve muscle pathology. (A) Representative images showing Notch pathway was activated in the *mdx*/NICD+ satellite cells after Tamoxifen injection. Muscle fibers from MDX/NICD- (Pax7$^{CreER/+}$/*mdx*) and MDX/NICD+ (Pax7$^{CreER/+}$/Rosa26^{NICD}/mdx) mice were labeled with Pax7 (red) and GFP (green). Nuclei were counterstained with DAPI (blue). GFP signal is turned on by Cre in the Rosa26$^{NICD\text{-}ires\text{-}nGFP}$ mice (called Rosa26^{NICD} here). (B) Representative H&E staining images showing muscle morphology of resting and CTX-injured *mdx*/NICD- and *mdx*/NICD+ mice (refer to Fig. 4). (C) Quantitative analysis of number of myofibers (>500 μm²) per unit field (1 mm²) in resting (-CTX) and CTX-treated (+CTX) muscles. n=3.