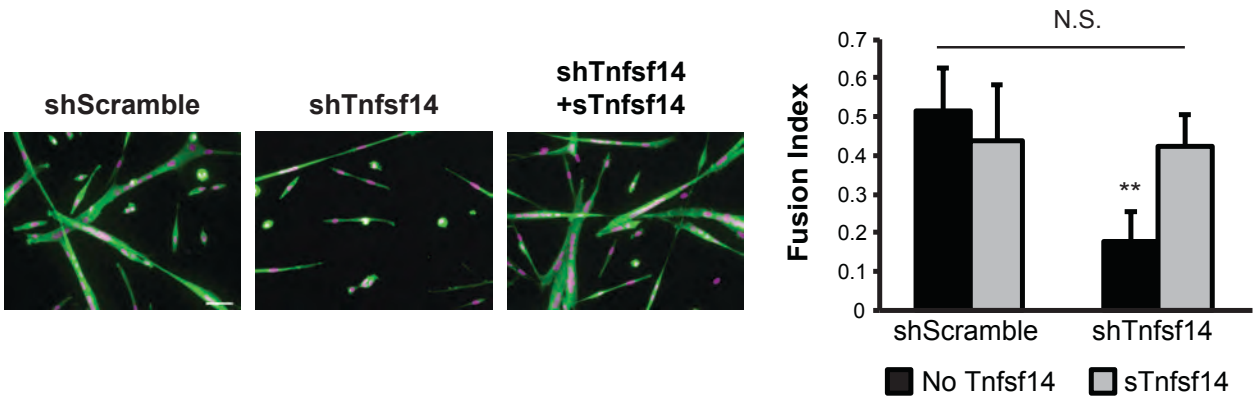


**Fig. S1. Tnfsf14 is necessary for primary myoblast differentiation**
Mouse primary myoblasts were infected with shRNA lentiviruses and differentiated for 48 hrs with or without 50 ng/mL sTnfsf14, followed by staining for MHC (green) and with DAPI (red). The fusion index was quantified (n=3). Error bars represent SD of independent replicates. Scale bar: 50 μm.

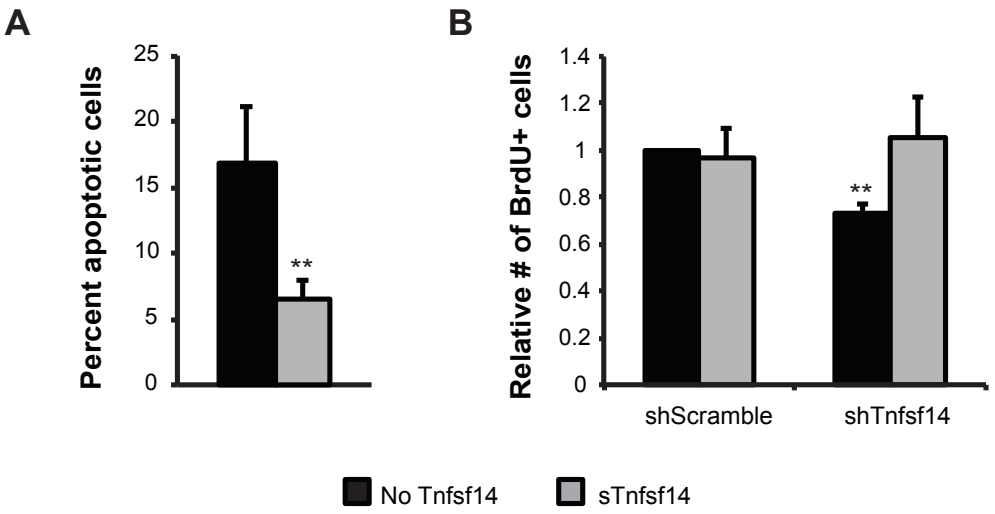


**Fig. S2. Tnfsf14 suppresses apoptosis and promotes proliferation of C2C12 cells**
(A) Proliferating C2C12 cells were exposed to 10 μM etoposide for 24 hours in the presence or absence of 25 ng/mL recombinant sTnfsf14. TUNEL assays were performed to assess the percentage of apoptotic cells (n=5).
(B) C2C12 cells were treated as in (A) and subjected to BrdU labeling to assess cell proliferation (n=4).
All error bars represent SD of independent replicates.

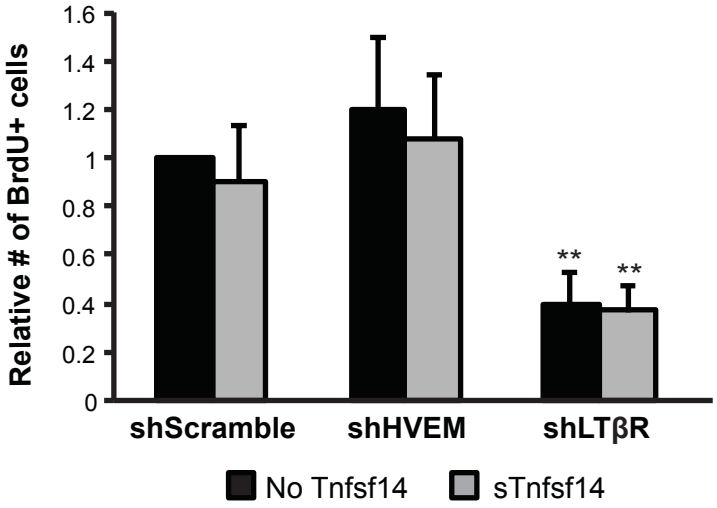


**Fig. S3. Tnfsf14 receptors in cell proliferation**
C2C12 cells were infected with shRNA lentiviruses as indicated and differentiated for 24 hrs in the presence or absence of 25 ng/mL recombinant sTnfsf14, followed by BrdU labeling to assess cell proliferation (n=4). All error bars represent SD of independent replicates.

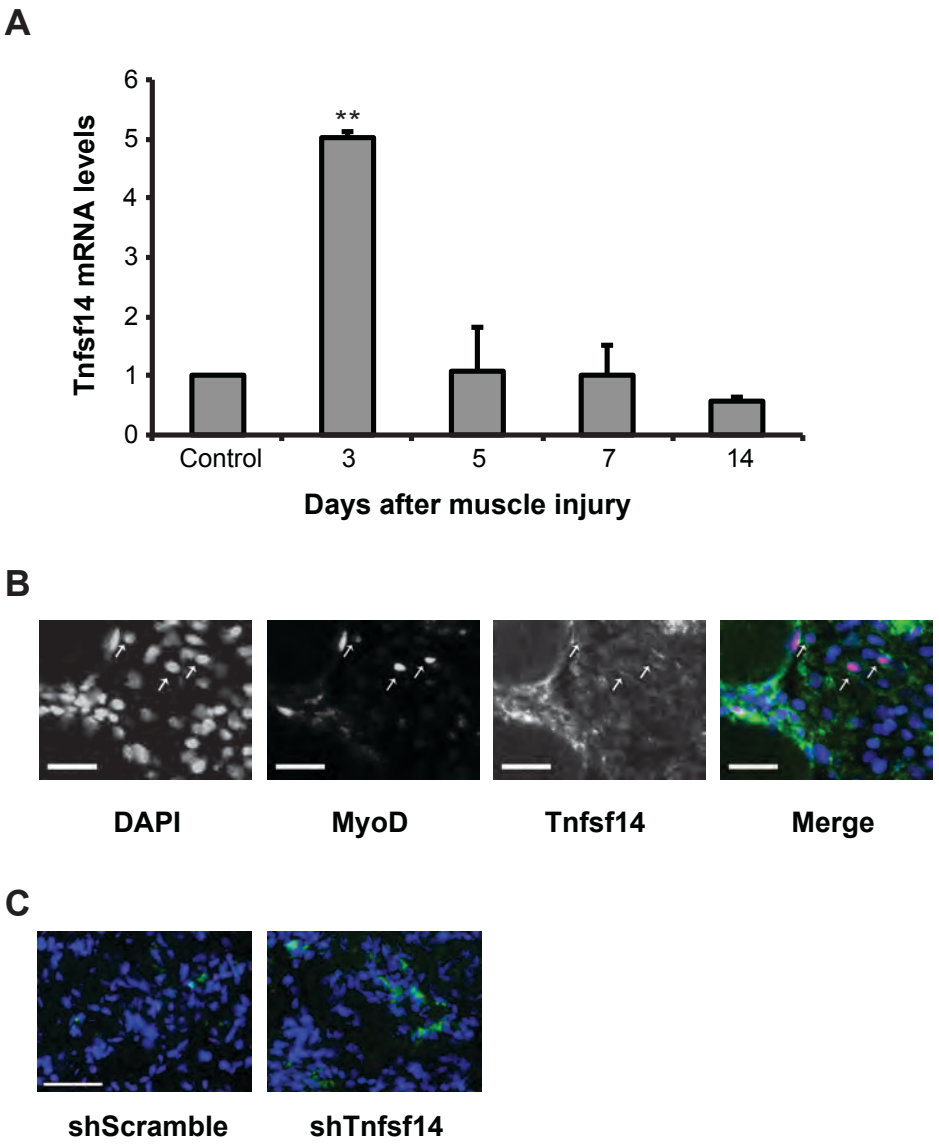


**Fig. S4. Tnfsf14 expression during muscle regeneration**
(A) TA muscles were injured by $BaCl_2$ injection, and isolated on days 3, 5, 7, and 14 after injury (AI). RNA was isolated and subjected to qRT-PCR assays to measure relative levels of Tnfsf14 mRNA (n=3). Error bars represent SD of independent replicates. One-sample 2-tailed t test was performed to compare data at each time point to control. ***P*<0.01.
(B) TA muscles were injured by $BaCl_2$ injection, and isolated on day 3 after injury (AI). Upon cryosection, immunofluorescence staining for Tnfsf14 (green), MyoD (red), and DAPI (blue) was performed (n=3). Scale bar: 25 μm. Arrows indicate some of the Tnfsf14+/MyoD+ cells.
(C) TA muscles were co-injected with $BaCl_2$ and shRNA viruses, and isolated on day 3 AI. Upon cryosection, immunofluorescence staining for cleaved PARP (green) and DAPI (blue) was performed (n=3). Scale bar: 50 μm.