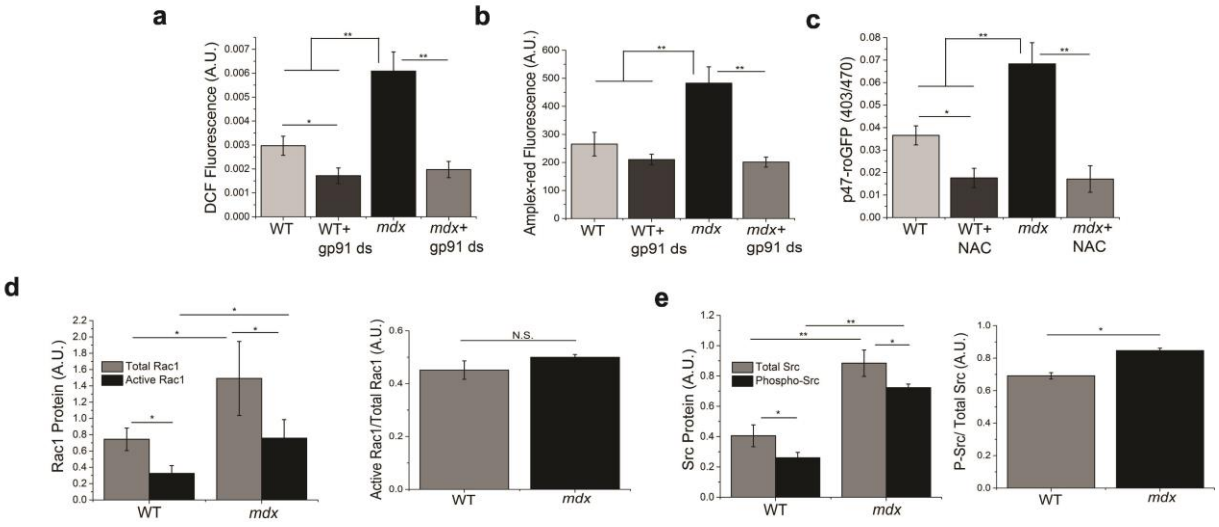
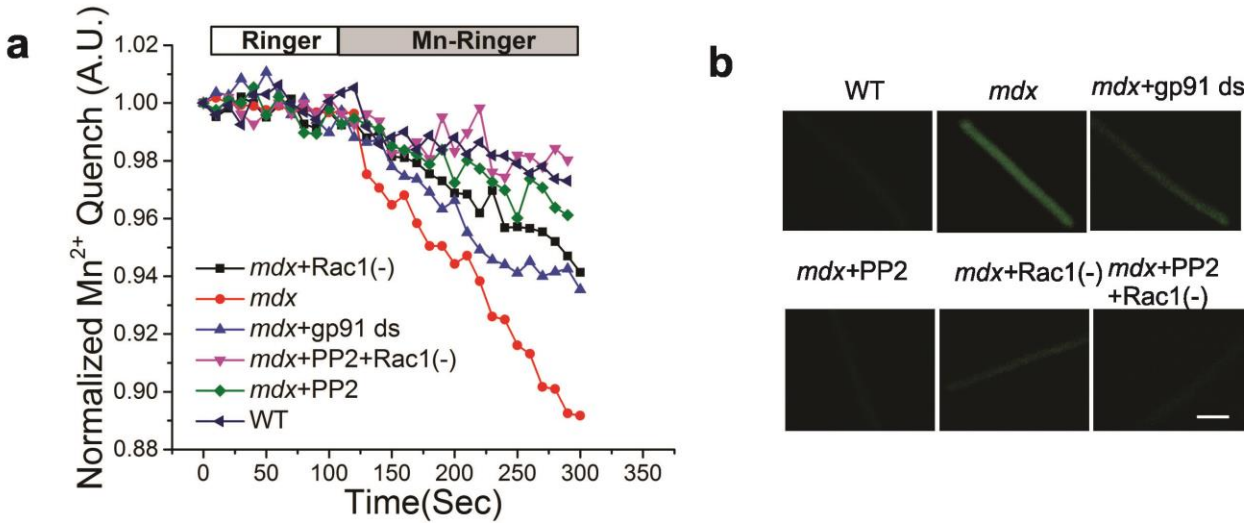
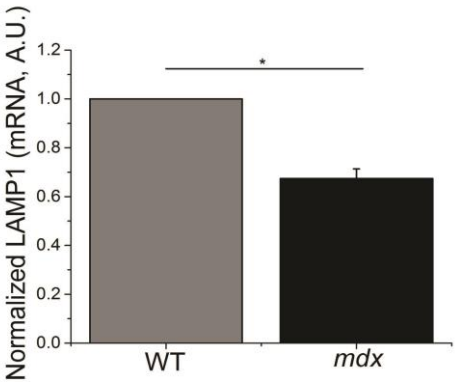


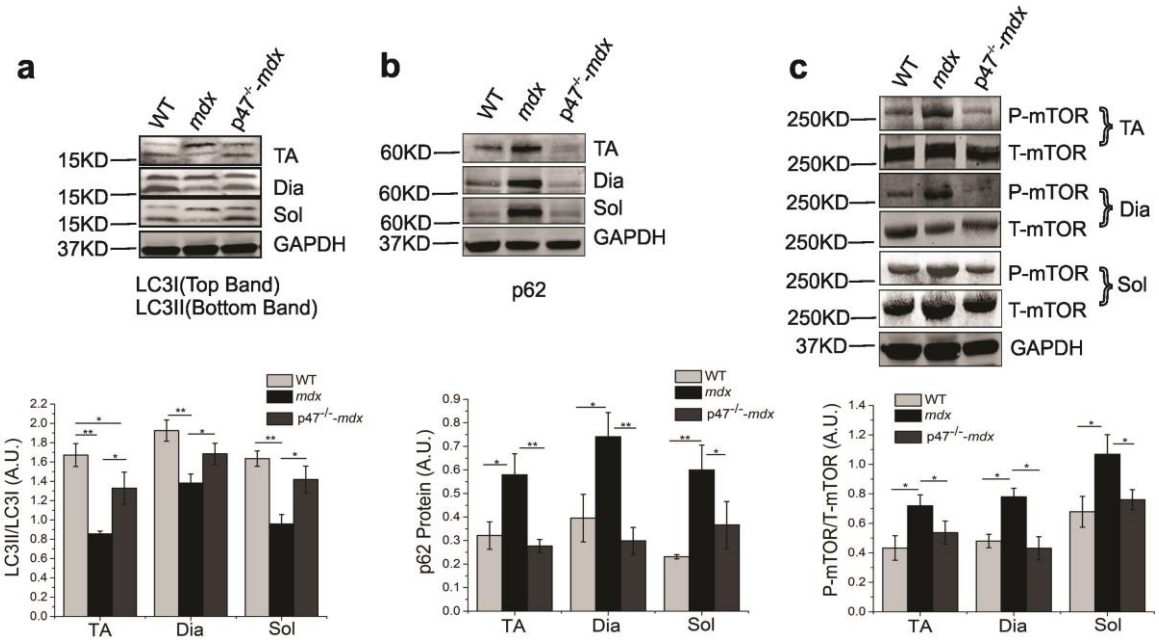
Supplementary Figure 1. Inhibition of Nox2 activity decreases ROS production. (**a**) Intracellular ROS production was assessed using DCF-DA dye. (**b**) Extracellular ROS (H_2O_2) generation was measured using Amplex-red dye. (**c**) Nox2-specific ROS production was assessed using the p47-roGFP redox biosensor. (**d**) Western blot analysis was done to detect Rac1 protein level. (**e**) Immunoblot analysis was done to detect Src protein level. All above analyses were done in enzymatically digested single FDBs from WT and *mdx* mice. Bar diagrams for **a**, **b** and **c** represent ±SEM from n=15 individual fibers for each conditions. Bar diagrams for (**d**) and (**e**) represent ±SEM from n=3 independent biological experiments. NS=non-significant. NAC: N-Acetyl Cysteine



Supplementary Figure 2. Inhibition of Nox2 activity decreases calcium influx and subsequent RNS production. (**a**) Plasma membrane calcium influx was measured in enzymatically digested single FDBs from WT and *mdx* mice by analyzing the quench of Fura-2 fluorescence upon addition of extracellular Mn^{2+}. Representative line-plot profiles from n=15 fibers per conditions are shown. (**b**) Intracellular RNS was assessed in enzymatically digested single FDBs from WT and *mdx* mice using DAF-FM dye. Representative fluorescence images are shown. Scale bar represents 200 µm.



Supplementary Figure 3. LAMP1 mRNA levels are higher in *mdx* mice compared to WT mice. q-RTPCR analysis of RNA extracted from FDBs shows LAMP1 expression in RNA level in WT and *mdx* mice. Bar diagram represents ±SEM from n=3 independent biological experiments.



Supplementary Figure 4. Genetic inhibition of Nox2 activity restores autophagy markers in *mdx* mice. (**a**) Immunoblot analysis was done to detect LC3B protein level. (**b**) Immunoblot analysis was done to detect p62 protein level. (**c**) Immunoblot analysis was done to detect P-mTOR and mTOR protein levels. **a**, **b** and **c** are done in isolated proteins from TA of WT, *mdx* and p47$^{-/-}$-*mdx* mice. Representative immunoblot images are shown. Bar diagrams represent ±SEM from n=3 independent biological experiments.

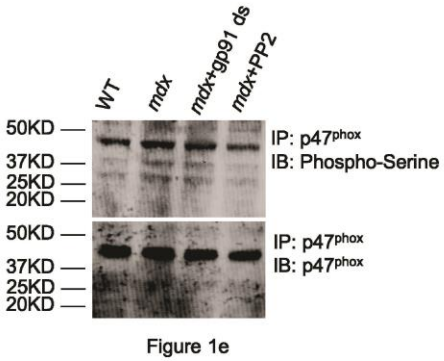


Figure 1e

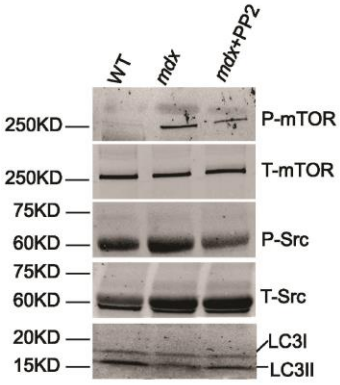


Figure 1j

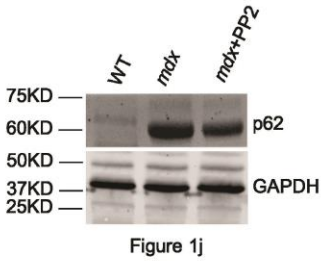


Figure 1j

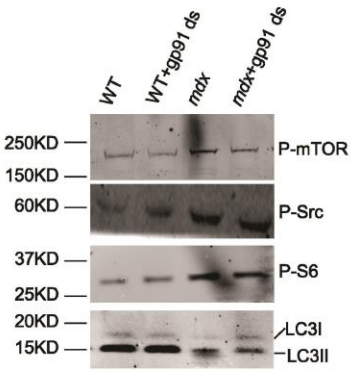


Figure 2a&c

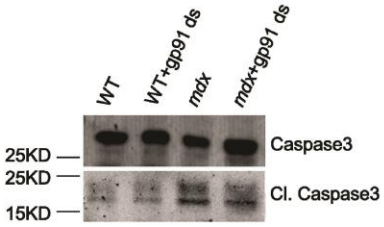


Figure 2g

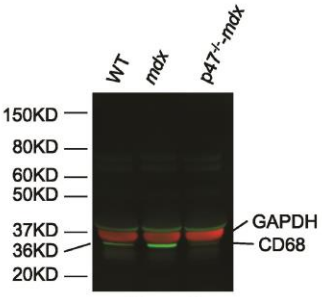


Figure 4b

Supplementary Figure 5. Representative uncropped westernblots.

Supplementary Table 1 Antibody dilutions

Antibody	**Company**	**Dilution**
Anti-active Rac1	Millipore	1:200
Anti-Rac1	Abcam	1:1000
GAPDH	Millipore	1:1000
Anti-p47^{phox}	Millipore	1:500
Anti-P-serine	Millipore	1:500
Anti-P-mTOR	Cell Signalling	1:500
Anti-T-mTOR	Cell Signalling	1:500
Anti-P-Src	Cell Signalling	1:500
Anti-p62	Santa Cruz-Biotechnologies	1:500
Anti-LC3B	Cell Signalling	1:1000
Anti-P-PI3K	Cell Signalling	1:500
Anti-T-PI3K	Cell Signalling	1:500
Anti-P-Akt	Cell Signalling	1:1000
Anti-T-Akt	Cell Signalling	1:1000
Anti-P-p70S6	Cell Signalling	1:1000
Anti-T-p70S6	Cell Signalling	1:1000
Anti-P-S6	Cell Signalling	1:1000
Anti-T-S6	Cell Signalling	1:1000
Anti-LAMP1	Cell Signalling	1:1000
Anti-PARP1	Cell Signalling	1:500
Anti-Caspase3	Cell Signalling	1:500
Anti-Cl.Caspase3	Cell Signalling	1:500

CD68	BioLegend	1:1000
Anti-Type I (BA-F8)	Developmental Studies Hybridoma Bank (DSHB)	1:100
Anti-Type IIA (SC-71)	Developmental Studies Hybridoma Bank (DSHB)	1:100