

Supplementary Information for

Monitoring Disease Activity Non-invasively in the *mdx* Model of Duchenne Muscular Dystrophy

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Figs. S1 to S3

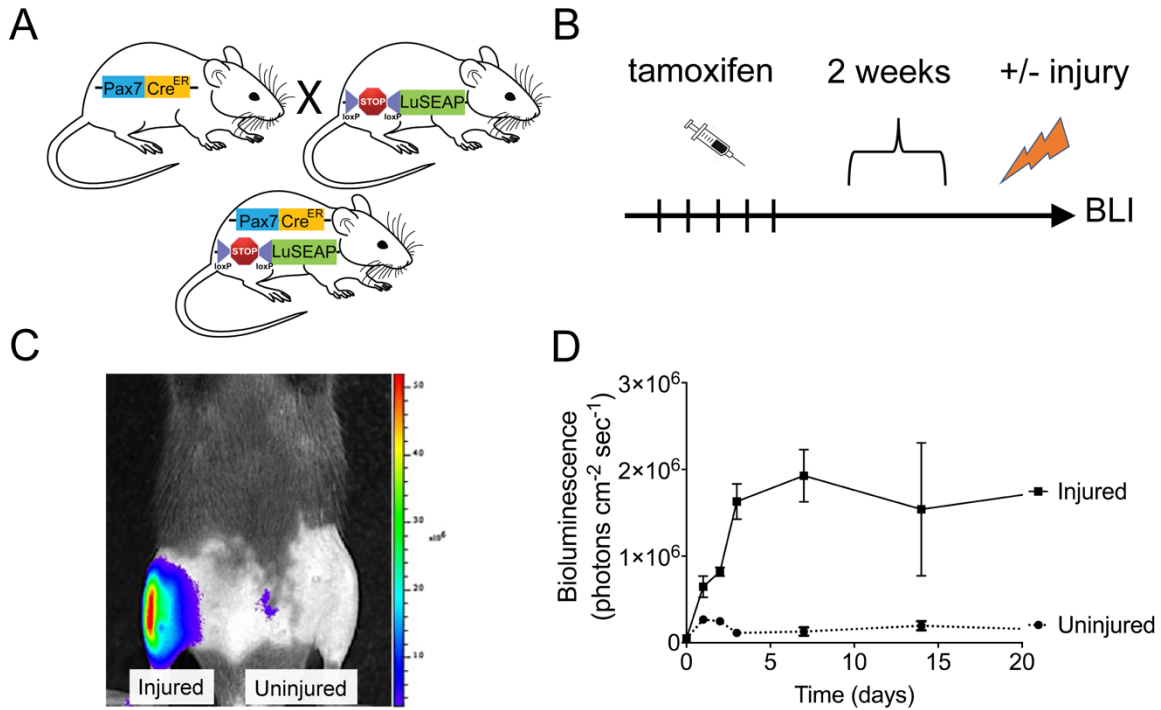


Fig. S1. Characterization of the Regeneration Reporter mice.

(A) Schematic of the breeding strategy used to obtain mice with the *Pax7^{CreER/ER}* transgene and with the luciferase gene flanked by *loxP* sites. In the *Pax7^{CreER/Rosa26^{LuSEAP/wt}}* progeny, the STOP sequence is deleted following tamoxifen injection and luciferase expression is observed in the reporter mice. (B) Scheme of tamoxifen injection and sample analysis. (A) BLI images of representative wild-type mice seven days after an acute injury and control uninjured hindlimb. (B) Luciferase expression of Regeneration Reporter mice monitored over three weeks. BLI values are indicated as radiance ($\text{p}/\text{cm}^{-2}/\text{s}^{-1}$). Data represent the mean \pm s.e.m.; $n = 3$.

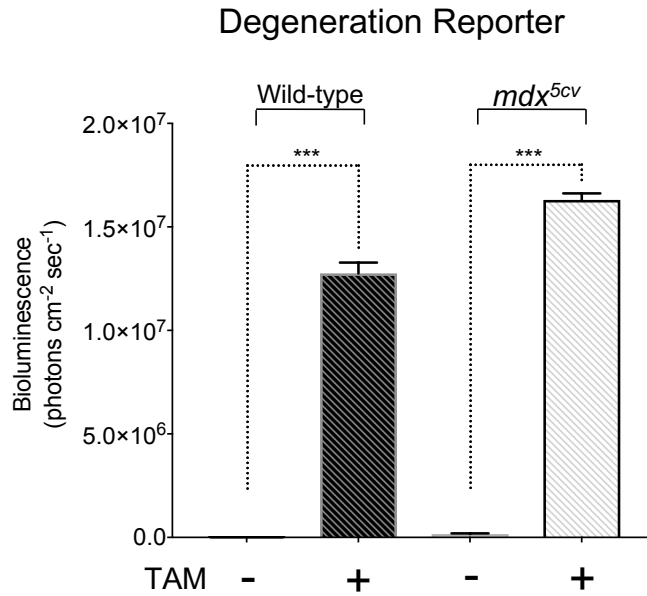


Fig. S2. BLI of wild-type and *mdx*^{5cv} Degeneration Reporter mice injected before and after tamoxifen injections.

BLI data from hindlimb muscles of both wild-type and *mdx*^{5cv} Degeneration Reporter imaged at seven months of age after being injected with corn oil (-TAM) or tamoxifen (+TAM) at two months of age. Data represent the mean ± s.e.m.; n=3.; *** P<0.0001.

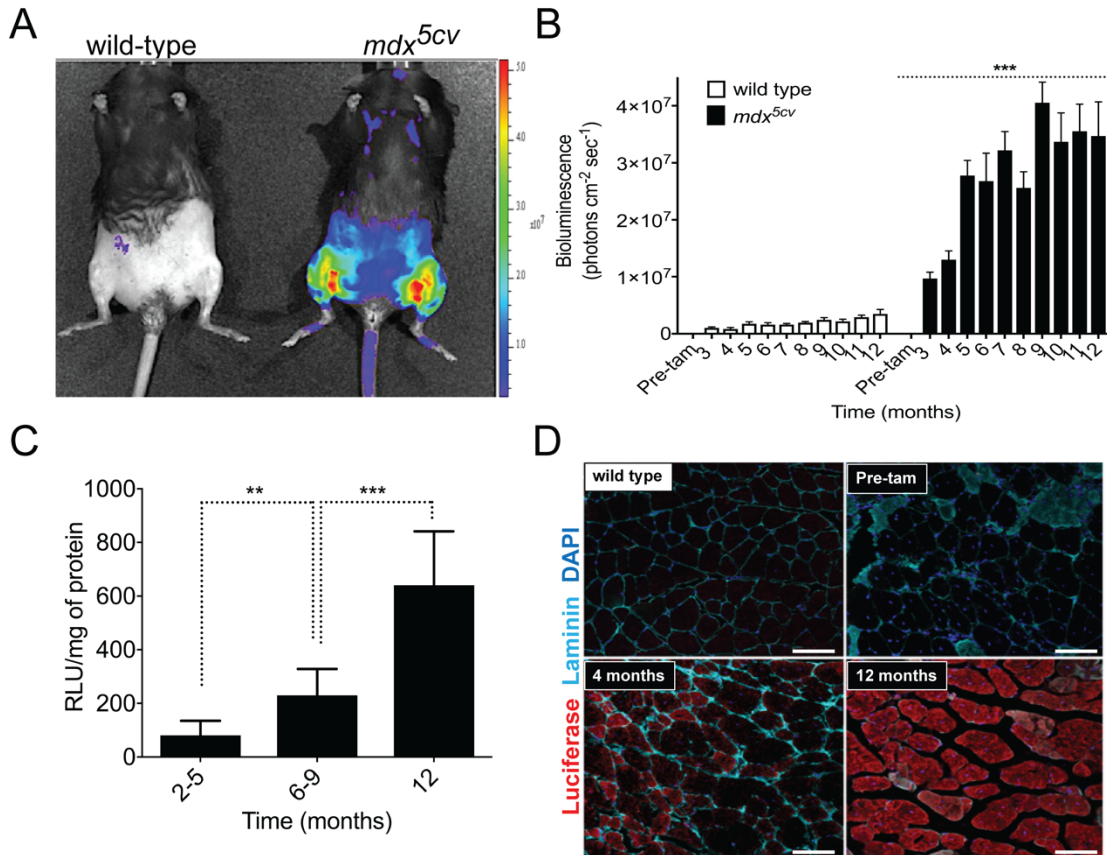


Fig. S3. Disease activity monitored in the *mdx^{5cv}* Regeneration Reporter mice.

(A) Representative examples of wild-type and *mdx^{5cv}* Regeneration Reporter strains imaged at five months of age. (B) BLI data from hindlimb muscles of both wild-type and *mdx^{5cv}* Regeneration Reporter mice prior to tamoxifen administration (three months of age; “Pre-tam”) and then monthly thereafter, up to twelve months of age.

Data represent the mean \pm s.e.m.; n=9; *** P<0.0001, relative to the respective control group. (C) Luciferase enzymatic activity from hindlimb muscles of *mdx^{5cv}* Regeneration Reporter mice of different age ranges following tamoxifen injection at two months of age. (D) Immunostaining for luciferase (red) and laminin (cyan) in *gastrocnemius* muscles of *mdx^{5cv}* Regeneration Reporter mice at different ages following tamoxifen injection at two months of age. 4,6-diamidino-2-phenylindole (blue). Scale bar: 50 μ m.