a QuantiTect Reverse Transcription kit (Qiagen) according to the manufacturer's instructions. The cDNA product (1 μL) was then used as the template for PCR in a 20-μL reaction with 0.10 μL of Ex Taq Hot Start Version (Takara). The reaction mixture composed of 10× PCR buffer (Roche), 10 mM of each dNTP (Qiagen), and 10 μM of each primer. The primer sequences for the PCR were designed using Primer3 (http://frodo.wi.mit.edu/) and described in Table S2. The cycling conditions were at 95 °C for 4 min, then 94 °C for 0.5 min, 60 °C for 0.5 min, 72 °C for 1.2 min for 35 cycles, and at 72 °C for 7 min. PCR products were separated on a 2% (wt/wt) agarose gel. Bands of the expected size for the transcript were extracted by using a gel extraction kit (Qiagen). Direct sequencing for PCR products was performed at Operon Biotechnologies.

Immunohistochemistry and Histology. At least ten 7-μm cryosections were cut at 100-μm intervals from the quadriceps, the TA, the gastrocnemius, the triceps brachii, the diaphragm, and the heart muscles. The serial sections were stained with antidystrophin antibody such as monoclonal mouse antibody MANEX46B against exon 46, monoclonal mouse antibody MANEX50 against exon 50, and polyclonal rabbit antibody P7 against exon 57 (provided by Qi-Long Lu, Carolinas Medical Center, Charlotte, NC) anti–α-sarcoglycan monoclonal mouse antibody (Novocastra Laboratories), anti–β-dystroglycan monoclonal mouse antibody (Novocastra Laboratories), anti–anti-alpha1-syntrophin polyclonal rabbit antibody (Abcam), and antineuronal nitric oxide synthase polyclonal rabbit antibody (Zymed). Alexa 568 (Invitrogen) was used as a secondary antibody. The maximum number of dystrophin-positive fibers in one section of TA was counted under a BZ-9000 fluorescence microscope (Keyence). H&E staining was performed using Harris H&E.

Western Blotting Analysis. Western blot analysis was performed as previously described (7). Two to 20 μg of protein from the TA muscle of a WT mouse as a positive control, 20 μg of protein from the TA muscle of untreated *mdx52* as a negative control, and 20 μg of protein from the muscles of treated *mdx52* mice were loaded onto a 5–15% (wt/vol) XV Pantera gel (DRC). The samples were transferred onto an Immobilon PVDF membrane (Millipore) by semidry blotting at 5 mA/mm^2 for 1 h. The membrane was then incubated with the C-terminal monoclonal antibody DYS2 (Novocastra Laboratories), anti–α-sarcoglycan monoclonal mouse antibody (Novocastra Laboratories), anti–β-dystroglycan monoclonal mouse antibody (Novocastra Laboratories), anti–anti-alpha1-syntrophin polyclonal rabbit antibody (Abcam), and antineuronal nitric oxide synthase polyclonal rabbit antibody (Zymed) at room temperature for 1 h. Anti–α-tubulin (Abcam) was used as loading controls. The intensity of the bands obtained from the treated *mdx52* muscles was analyzed using ImageJ software (http://rsb.info.nih.gov/ij/) and compared with that from normal WT muscles.

Blood Analysis and Muscle Functional Testing. The blood analysis, grip strength, treadmill, and rotarod tests of the mice were performed as previously described (7).

Statistical Analysis. Statistical differences were assessed by one-way analysis of variance with differences among the groups assessed by a Tukey comparison, or χ^2 test. All data are reported as mean values ± SD or ± SEM. The level of significance was set at $P < 0.05$.

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