SANTA CRUZ BIOTECHNOLOGY, INC.

dystrophin (7A10): sc-47760

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Dystrophin-glycoprotein complex (DGC) connects the F-Actin cytoskeleton on the inner surface of muscle fibers to the surrounding extracellular matrix, through the cell membrane interface. A deficiency in this protein contributes to Duchenne (DMD) and Becker (BMD) muscular dystrophies. The human dystrophin gene measures 2.4 megabases, has more than 80 exons, produces a 14 kb mRNA and contains at least 8 independent tissue-specific promoters and 2 poly A sites. The dystrophin mRNA can undergo differential splicing and produce a range of transcripts that encode a large set of proteins. dystrophin represents approximately 0.002% of total striated muscle protein and localizes to triadic junctions in skeletal muscle, where it is thought to influence calcium ion homeostasis and force transmission.

CHROMOSOMAL LOCATION

Genetic locus: DMD (human) mapping to Xp21.2; Dmd (mouse) mapping to X B.

SOURCE

dystrophin (7A10) is a mouse monoclonal antibody raised against amino acids 3200-3684 of human recombinant dystrophin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

dystrophin (7A10) is available conjugated to agarose (sc-47760 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-47760 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-47760 PE), fluorescein (sc-47760 FITC), Alexa Fluor® 488 (sc-47760 AF488), Alexa Fluor® 546 (sc-47760 AF546), Alexa Fluor® 594 (sc-47760 AF594) or Alexa Fluor® 647 (sc-47760 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-47760 AF680) or Alexa Fluor® 790 (sc-47760 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

dystrophin (7A10) is recommended for detection of an epitope corresponding to amino acids 3558-3684 of dystrophin of mouse, rat, human and fish origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for dystrophin siRNA (h): sc-35240, dystrophin siRNA (m): sc-35241, dystrophin shRNA Plasmid (h): sc-35240-SH, dystrophin shRNA Plasmid (m): sc-35241-SH, dystrophin shRNA (h) Lentiviral Particles: sc-35240-V and dystrophin shRNA (m) Lentiviral Particles: sc-35241-V.

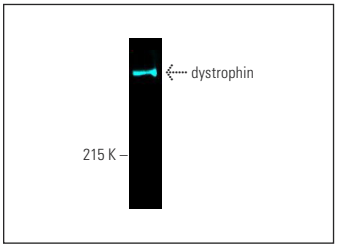
Molecular Weight of dystrophin: 427 kDa.

Positive Controls: rat skeletal muscle extract: sc-364810, A-10 cell lysate: sc-3806 or L8 cell lysate: sc-3807.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

DATA



dystrophin (7A10) Alexa Fluor® 647: sc-47760 AF647. Direct fluorescent western blot analysis of dystrophin expression in rat skeletal muscle tissue extract. Blocked with UltraCruz® Blocking Reagent: sc-516214.

dystrophin (7A10): sc-47760. Immunoperoxidase staining of formalin fixed, paraffin-embedded rat skeletal muscle tissue showing membrane and cytoplasmic staining of myocytes.

SELECT PRODUCT CITATIONS

1. Wang, Y., et al. 2014. Dystrophin is a tumor suppressor in human cancers with myogenic programs. Nat. Genet. 46: 601-606.
2. Lee, K., et al. 2017. Nanoparticle delivery of Cas9 ribonucleoprotein and donor DNA *in vivo* induces homology-directed DNA repair. Nat. Biomed. Eng. 1: 889-901.
3. Niba, E.T.E., et al. 2021. Dystrophin Dp71 subisoforms localize to the mitochondria of human cells. Life 11: 978.
4. Xiao, R., et al. 2022. Full-length dystrophin restoration via targeted exon addition in DMD-patient specific iPSCs and cardiomyocytes. Int. J. Mol. Sci. 23: 9176.
5. Xie, R., et al. 2022. pH-responsive polymer nanoparticles for efficient delivery of Cas9 ribonucleoprotein with or without donor DNA. Adv. Mater. 34: e2110618.
6. Zhu, M., et al. 2023. Guanidinium-rich lipopeptide-based nanoparticle enables efficient gene editing in skeletal muscles. ACS Appl. Mater. Interfaces 15: 10464-10476.
7. Swiderski, K., et al. 2024. The BALB/c.mdx62 mouse exhibits a dystrophic muscle pathology and is a model of Duchenne muscular dystrophy. Dis. Model. Mech. 17: dmm050502.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.