SANTA CRUZ BIOTECHNOLOGY, INC.

utrophin (8A4): sc-33700

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Dystrophin and utrophin are related structural, Actin-binding proteins that are involved in anchoring the cytoskeleton to the plasma membrane. Dystrophin is the protein product of the Duchenne/Becker muscular dystrophy gene. Dystrophin expression is found in muscle and brain tissues, where it is localized to the inner surface of the plasma membrane. It has been speculated that alternative splicing of the carboxy terminus allows dystrophin to interact with a variety of proteins. Research has shown that the loss of dystrophin-associated proteins in Duchenne afflicted muscle is due to the absence of dystrophin rather than to muscle degradation and that the lack of dystrophin results in the loss of linkage between the cytoskeleton and the extracellular matrix. Evidence suggests that the upregulation of utrophin can reduce the dystrophic pathology.

CHROMOSOMAL LOCATION

Genetic locus: UTRN (human) mapping to 6q24.2; Utrn (mouse) mapping to 10 A1.

SOURCE

utrophin (8A4) is a mouse monoclonal antibody raised against a recombinant fragment of utrophin of human origin.

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.

utrophin (8A4) is available conjugated to agarose (sc-33700 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-33700 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-33700 PE), fluorescein (sc-33700 FITC), Alexa Fluor® 488 (sc-33700 AF488), Alexa Fluor® 546 (sc-33700 AF546), Alexa Fluor® 594 (sc-33700 AF594) or Alexa Fluor® 647 (sc-33700 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-33700 AF680) or Alexa Fluor® 790 (sc-33700 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

utrophin (8A4) is recommended for detection of utrophin of mouse, rat, human and *Xenopus laevis* 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 utrophin siRNA (h): sc-43494, utrophin siRNA (m): sc-43495, utrophin shRNA Plasmid (h): sc-43494-SH, utrophin shRNA Plasmid (m): sc-43495-SH, utrophin shRNA (h) Lentiviral Particles: sc-43494-V and utrophin shRNA (m) Lentiviral Particles: sc-43495-V.

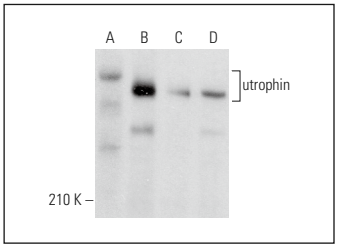
Molecular Weight of utrophin: 400 kDa.

Positive Controls: C2C12 whole cell lysate: sc-364188, SJRH30 cell lysate: sc-2287 or Caco-2 cell lysate: sc-2262.

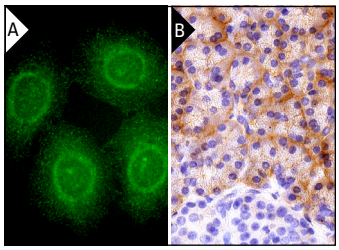
STORAGE

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

DATA



utrophin (8A4): sc-33700. Western blot analysis of utrophin expression in C2C12 (**A**), Caco-2 (**B**), SJRH30 (**C**) and A-673 (**D**) whole cell lysates.



utrophin (8A4): sc-33700. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic and membrane localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human pancreas tissue showing membrane staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Sonnemann, K.J., et al. 2009. Functional substitution by TAT-utrophin in dystrophin-deficient mice. PLoS Med. 6: e1000083.
2. Prins, K.W., et al. 2011. Quadriceps myopathy caused by skeletal muscle-specific ablation of β(cyto)-Actin. J. Cell Sci. 124: 951-957.
3. van Putten, M., et al. 2012. Comparison of skeletal muscle pathology and motor function of dystrophin and utrophin deficient mouse strains. Neuromuscul. Disord. 22: 406-417.
4. Filareto, A., et al. 2013. An *ex vivo* gene therapy approach to treat muscular dystrophy using inducible pluripotent stem cells. Nat. Commun. 4: 1549.
5. D'Arcy, C.E., et al. 2014. Identification of FHL1 as a therapeutic target for Duchenne muscular dystrophy. Hum. Mol. Genet. 23: 618-636.
6. Shah, F., et al. 2015. Unique expression of cytoskeletal proteins in human soft palate muscles. J. Anat. 228: 487-494.
7. Chiappalupi, S., et al. 2016. Intraperitoneal injection of microencapsulated Sertoli cells restores muscle morphology and performance in dystrophic mice. Biomaterials 75: 313-326.
8. Ballmann, C., et al. 2017. Lifelong quercetin enrichment and cardioprotection in Mdx/$Utrn^{+/-}$ mice. Am. J. Physiol. Heart Circ. Physiol. 312: H128-H140.
9. Cho, E.B., et al. 2018. β-dystroglycan is regulated by a balance between WWP1-mediated degradation and protection from WWP1 by dystrophin and utrophin. Biochim. Biophys. Acta 1864: 2199-2213.
10. Chiappalupi, S., et al. 2019. Do porcine Sertoli cells represent an opportunity for Duchenne muscular dystrophy? Cell Prolif. 52: e12599.

RESEARCH USE

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