SANTA CRUZ BIOTECHNOLOGY, INC.

TRIM72 (A-10): sc-514706

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The Power to Question

BACKGROUND

The tripartite motif (TRIM) family of proteins are characterized by a conserved TRIM domain that includes a coiled-coil region, a B-box type zinc finger, one RING finger and three zinc-binding domains. TRIM72 (tripartite motif containing 72), also known as MG53, is a 477 amino acid cytoplasmic vesicle membrane protein that belongs to the TRIM/RBCC family. Existing as a homooligomer, TRIM72 contains one B box-type zinc finger, one B30.2/SPRY domain and a RING-type zinc finger. TRIM72 is considered a muscle-specific protein that plays a central role in cell membrane repair by nucleating the assembly of the repair machinery at injury sites. TRIM72 is required for transport of dysferlin to sites of cell injury during repair patch formation. TRIM72 also regulates membrane budding and exocytosis and may be involved in the regulation of the mobility of KV2.1-containing endocytic vesicles. TRIM72 exists as two alternatively spliced isoforms and is encoded by a gene located on human chromosome 16p11.2.

REFERENCES

1. Weisleder, N., et al. 2009. Mitsugumin 53 (MG53) facilitates vesicle trafficking in striated muscle to contribute to cell membrane repair. Commun. Integr. Biol. 2: 225-226.
2. Cai, C., et al. 2009. MG53 regulates membrane budding and exocytosis in muscle cells. J. Biol. Chem. 284: 3314-3322.
3. Cai, C., et al. 2009. Membrane repair defects in muscular dystrophy are linked to altered interaction between MG53, caveolin-3, and dysferlin. J. Biol. Chem. 284: 15894-15902.
4. Cai, C., et al. 2009. MG53 nucleates assembly of cell membrane repair machinery. Nat. Cell Biol. 11: 56-64.

CHROMOSOMAL LOCATION

Genetic locus: TRIM72 (human) mapping to 16p11.2.

SOURCE

TRIM72 (A-10) is a mouse monoclonal antibody raised against amino acids 114-257 mapping within an internal region of TRIM72 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.

TRIM72 (A-10) is available conjugated to agarose (sc-514706 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-514706 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-514706 PE), fluorescein (sc-514706 FITC), Alexa Fluor® 488 (sc-514706 AF488), Alexa Fluor® 546 (sc-514706 AF546), Alexa Fluor® 594 (sc-514706 AF594) or Alexa Fluor® 647 (sc-514706 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-514706 AF680) or Alexa Fluor® 790 (sc-514706 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

APPLICATIONS

TRIM72 (A-10) is recommended for detection of TRIM72 of human origin by Western Blotting (starting dilution 1:100, 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for TRIM72 siRNA (h): sc-93129, TRIM72 shRNA Plasmid (h): sc-93129-SH and TRIM72 shRNA (h) Lentiviral Particles: sc-93129-V.

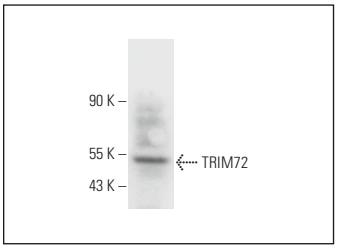
Molecular Weight of TRIM72: 55 kDa.

Positive Controls: SJRH30 cell lysate: sc-2287 or human skeletal muscle extract: sc-363776.

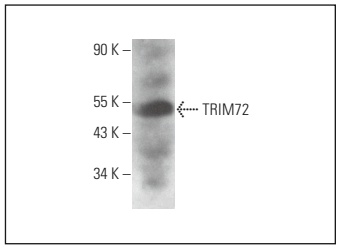
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



TRIM72 (A-10): sc-514706. Western blot analysis of TRIM72 expression in SJRH30 whole cell lysate.



TRIM72 (A-10): sc-514706. Western blot analysis of TRIM72 expression in human skeletal muscle tissue extract.

SELECT PRODUCT CITATIONS

1. Jiang, P., et al. 2021. Negative regulation of AMPK signaling by high glucose via E3 ubiquitin ligase MG53. Mol. Cell 81: 629-637.e5.
2. Stole, T.P., et al. 2022. The female syndecan-$4^{-/-}$ heart has smaller cardiomyocytes, augmented Insulin/pSer473-Akt/pSer9-GSK-3β signaling, and lowered SCOP, pThr308-Akt/Akt and GLUT4 levels. Front. Cell Dev. Biol. 10: 908126.

RESEARCH USE

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