SANTA CRUZ BIOTECHNOLOGY, INC.

MuRF1 (SW-53): sc-134397

BACKGROUND

Muscle specific RING-finger protein (MuRF1) is a sarcomere-associated protein that is upregulated by conditions that provoke atrophy. Pharmacological or genetic inhibition of the IKKβ/NFκB/MuRF1 pathway reverses muscle atrophy, which presents MuRF as a target for clinical intervention. MURF1 is a key regulator of the PKC-dependent hypertrophic response and can blunt cardiomyocyte hypertrophy, which may have important implications in the pathophysiology of clinical cardiac hypertrophy. MuRF1 directly associates with Titin kinase and influences microtubule-dependent signaling pathways in striated muscle and iris. MuRF1 upregulation is an indicator for skeletal muscle atrophy mechanisms that utilize ubiquitin-dependent proteolysis. MuRF1 transcript levels are high in situations where there is an overabundance of reactive oxygen species, such as cancer, AIDS and sepsis.

REFERENCES

1. Centner, T., et al. 2001. Identification of muscle specific RING-finger proteins as potential regulators of the Titin kinase domain. J. Mol. Biol. 306: 717-726.
2. Bodine, S.C., et al. 2001. Identification of ubiquitin ligases required for skeletal muscle atrophy. Science 294: 1704-1708.
3. Li, Y.P., et al. 2003. Hydrogen peroxide stimulates ubiquitin-conjugating activity and expression of genes for specific E2 and E3 proteins in skeletal muscle myotubes. Am. J. Physiol., Cell Physiol. 285: C806-C812.
4. Glass, D.J. 2003. Signalling pathways that mediate skeletal muscle hypertrophy and atrophy. Nat. Cell Biol. 5: 87-90.
5. Glass, D.J. 2003. Molecular mechanisms modulating muscle mass. Trends Mol. Med. 9: 344-350.
6. Kedar, V., et al. 2004. Muscle-specific RING finger 1 is a bonafide ubiquitin ligase that degrades cardiac Troponin I. Proc. Natl. Acad. Sci. USA 101: 18135-18140.
7. Sacheck, J.M., et al. 2004. IGF-I stimulates muscle growth by suppressing protein breakdown and expression of atrophy-related ubiquitin ligases, atrogin-1 and MuRF1. Am. J. Physiol. Endocrinol. Metab. 287: E591-E601.

CHROMOSOMAL LOCATION

Genetic locus: TRIM63 (human) mapping to 1p36.11.

SOURCE

MuRF1 (SW-53) is a mouse monoclonal antibody raised against recombinant MuRF1 protein of human origin.

PRODUCT

Each vial contains 100 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

APPLICATIONS

MuRF1 (SW-53) is recommended for detection of MuRF1 of human 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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for MuRF1 siRNA (h): sc-43951, MuRF1 shRNA Plasmid (h): sc-43951-SH and MuRF1 shRNA (h) Lentiviral Particles: sc-43951-V.

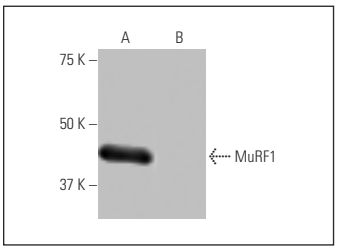
Molecular Weight of MuRF1: 44 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200 or human MuRF1 transfected 293T whole cell lysate.

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).

DATA



MuRF1 (SW-53): sc-134397. Western blot analysis of MuRF1 expression in human MuRF1 transfected (**A**) and non-transfected (**B**) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Liu, J., et al. 2013. Electrical stimulation by semi-implantable electrodes decreases the levels of proteins associated with sciatic nerve injury-induced muscle atrophy. Mol. Med. Rep. 8: 245-249.

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.