

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 IKK β /NF κ B/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

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- 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.
- Glass, D.J. 2003. Signalling pathways that mediate skeletal muscle hypertrophy and atrophy. *Nat. Cell Biol.* 5: 87-90.
- Glass, D.J. 2003. Molecular mechanisms modulating muscle mass. *Trends Mol. Med.* 9: 344-350.
- 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.
- Sachek, 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 μ g IgG γ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

Store at 4 $^{\circ}$ 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 μ g per 100-500 μ g 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.

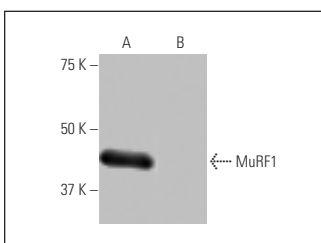
Molecular Weight of MuRF1: 44 kDa.

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-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz MarkerTM 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

- 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.