

# MuRF1 (S-15): sc-27643

## BACKGROUND

Muscle specific RING finger protein (MuRF1) is a sarcomere-associated protein that is up-regulated by conditions that provoke atrophy. Pharmacological or genetic inhibition of the IKK $\beta$ /NF $\kappa$ 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. MuRF-1 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.
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- Sachek, J.M., et al. 2004. IGF-I stimulates muscle growth by suppressing protein breakdown and expression of atrophy-related ubiquitin ligases, atrogen-1 and MuRF1. *Am. J. Physiol. Endocrinol. Metab.* 287: E591-E601.
- Kedar, V., et al. 2004. Muscle-specific RING finger 1 is a bona fide ubiquitin ligase that degrades cardiac troponin I. *Proc. Natl. Acad. Sci. USA* 101: 18135-18140.

## CHROMOSOMAL LOCATION

Genetic locus: Trim63 (mouse) mapping to 4 D3.

## SOURCE

MuRF1 (S-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of MuRF1 of rat origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-27643 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

MuRF1 (S-15) is recommended for detection of MuRF1 of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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 MuRF1 siRNA (m): sc-149717, MuRF1 siRNA (r): sc-156173, MuRF1 shRNA Plasmid (m): sc-149717-SH, MuRF1 shRNA Plasmid (r): sc-156173-SH, MuRF1 shRNA (m) Lentiviral Particles: sc-149717-V and MuRF1 shRNA (r) Lentiviral Particles: sc-156173-V.

Molecular Weight of MuRF1: 40 kDa.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker<sup>™</sup> compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz<sup>™</sup> Mounting Medium: sc-24941.

## STORAGE

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

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.


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Try **MuRF1 (C-11): sc-398608**, our highly recommended monoclonal alternative to MuRF1 (S-15).