SANTA CRUZ BIOTECHNOLOGY, INC.

MuRF1 (N-15): sc-27640

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 IKKbeta/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. 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

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. 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.
7. 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 (human) mapping to 1p36.11.

SOURCE

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

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-27640 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

MuRF1 (N-15) is recommended for detection of MuRF1 of human 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).

MuRF1 (N-15) is also recommended for detection of MuRF1 in additional species, including equine, canine, bovine and porcine.

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: 40 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200.

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™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ 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™ 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 or our catalog for detailed protocols and support products.