SANTA CRUZ BIOTECHNOLOGY, INC.

MuRF1 (H-145): sc-32920

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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.

CHROMOSOMAL LOCATION

Genetic locus: TRIM63 (human) mapping to 1p36.11; Trim63 (mouse) mapping to 4 D3.

SOURCE

MuRF1 (H-145) is a rabbit polyclonal antibody raised against amino acids 184-328 mapping near 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.

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.

APPLICATIONS

MuRF1 (H-145) is recommended for detection of MuRF1 isoforms 1 and 2 of mouse, rat and 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)], 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 (H-145) is also recommended for detection of MuRF1 isoforms 1 and 2 in additional species, including canine, bovine and porcine.

Suitable for use as control antibody for MuRF1 siRNA (h): sc-43951, MuRF1 siRNA (m): sc-149717, MuRF1 shRNA Plasmid (h): sc-43951-SH, MuRF1 shRNA Plasmid (m): sc-149717-SH, MuRF1 shRNA (h) Lentiviral Particles: sc-43951-V and MuRF1 shRNA (m) Lentiviral Particles: sc-149717-V.

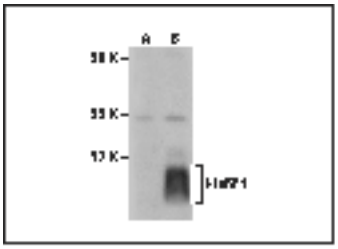
Molecular Weight of MuRF1: 40 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200 or MuRF1 (h): 293T Lysate: sc-369006.

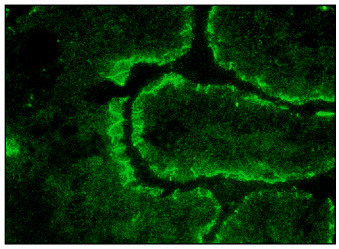
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



MuRF1 (H-145): sc-32920. Western blot analysis of MuRF1 expression in non-transfected: sc-117752 (A) and human MuRF1 transfected: sc-395885 (B) 293T whole cell lysates.



MuRF1 (H-145): sc-32920. Immunofluorescence staining of normal mouse intestine frozen section showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Poylin, V., et al. 2008. The NFκB inhibitor curcumin blocks sepsis-induced muscle proteolysis. Mediators Inflamm. 2008: 317851.
2. Karagounis, L.G., et al. 2010. Contraction-induced changes in TNFα and Akt-mediated signalling are associated with increased myofibrillar protein in rat skeletal muscle. Eur. J. Appl. Physiol. 109: 839-848.
3. Glynn, E.L., et al. 2010. Muscle protein breakdown has a minor role in the protein anabolic response to essential amino acid and carbohydrate intake following resistance exercise. Am. J. Physiol. Regul. Integr. Comp. Physiol. 299: R533-R540.
4. Carmignac, V., et al. 2011. Proteasome inhibition improves the muscle of laminin α2 chain-deficient mice. Hum. Mol. Genet. 20: 541-552.
5. Kukreti, H., et al. 2013. Muscle-specific microRNA1 (miR1) targets heat shock protein 70 (HSP70) during dexamethasone-mediated atrophy. J. Biol. Chem. 288: 6663-6678.
6. Gómez-Sanmiguel, A.B., et al. 2013. Systemic α-melanocyte-stimulating hormone administration decreases arthritis-induced anorexia and muscle wasting. Am. J. Physiol. Regul. Integr. Comp. Physiol. 304: R877-R886.