

MuRF1 (C-11): sc-398608

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 MuRF1 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 (C-11) is a mouse monoclonal antibody raised against amino acids 184-328 mapping near the N-terminus of MuRF1 of human origin.

PRODUCT

Each vial contains 200 μ g IgG $_1$ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

MuRF1 (C-11) is available conjugated to agarose (sc-398608 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-398608 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-398608 PE), fluorescein (sc-398608 FITC), Alexa Fluor[®] 488 (sc-398608 AF488), Alexa Fluor[®] 546 (sc-398608 AF546), Alexa Fluor[®] 594 (sc-398608 AF594) or Alexa Fluor[®] 647 (sc-398608 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-398608 AF680) or Alexa Fluor[®] 790 (sc-398608 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

MuRF1 (C-11) is recommended for detection of MuRF1 isoforms 1 and 2 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (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 (h): sc-43951, MuRF1 siRNA (m): sc-149717, MuRF1 siRNA (r): sc-156173, MuRF1 shRNA Plasmid (h): sc-43951-SH, MuRF1 shRNA Plasmid (m): sc-149717-SH, MuRF1 shRNA Plasmid (r): sc-156173-SH, MuRF1 shRNA (h) Lentiviral Particles: sc-43951-V, MuRF1 shRNA (m) Lentiviral Particles: sc-149717-V and MuRF1 shRNA (r) Lentiviral Particles: sc-156173-V.

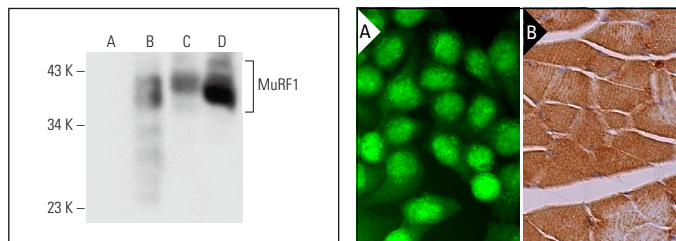
Molecular Weight of MuRF1: 40 kDa.

Positive Controls: MuRF1 (h): 293T Lysate: sc-369006.

STORAGE

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

DATA



MuRF1 (C-11): sc-398608. Western blot analysis of MuRF1 expression in non-transfected: sc-117752 (A) and human MuRF1 transfected: sc-369006 (B) 293T whole cell lysates and mouse heart (C) and mouse skeletal muscle (D) tissue extracts.

MuRF1 (C-11): sc-398608. Immunofluorescence staining of formalin-fixed HeLa cells showing nuclear and faint cytoplasmic localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human skeletal muscle tissue showing cytoplasmic staining of myocytes (B).

SELECT PRODUCT CITATIONS

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- Lu, T., et al. 2017. Role of Nrf2 signaling in the regulation of vascular BK channel β 1 subunit expression and BK channel function in high-fat diet-induced diabetic mice. *Diabetes* 66: 2681-2690.
- Worton, L.E., et al. 2018. Botulinum toxin A-induced muscle paralysis stimulates Hdac4 and differential miRNA expression. *PLoS ONE* 13: e0207354.
- Wafi, A.M., et al. 2019. Curcumin improves exercise performance of mice with coronary artery ligation induced HFrEF: Nrf2 and antioxidant mechanisms in skeletal muscle. *J. Appl. Physiol.* 126: 477-486.
- Yokokawa, T., et al. 2020. Muscle denervation reduces mitochondrial biogenesis and mitochondrial translation factor expression in mice. *Biochem. Biophys. Res. Commun.* 527: 146-152.
- Cieminski, K., et al. 2021. Swim training affects Akt signaling and ameliorates loss of skeletal muscle mass in a mouse model of amyotrophic lateral sclerosis. *Sci. Rep.* 11: 20899.
- Yuzawa, R., et al. 2022. VDR regulates simulated microgravity-induced atrophy in C2C12 myotubes. *Sci. Rep.* 12: 1377.
- Fahrner, A., et al. 2023. microRNA-501 controls myogenin⁺/CD74⁺ myogenic progenitor cells during muscle regeneration. *Mol. Metab.* 71: 101704.
- Zheng, Y., et al. 2023. Endoplasmic reticulum stress promotes sepsis-induced muscle atrophy via activation of STAT3 and Smad3. *J. Cell. Physiol.* 238: 582-596.

RESEARCH USE

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

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