SANTA CRUZ BIOTECHNOLOGY, INC.

MuRF2 siRNA (h): sc-61101

BACKGROUND

MuRF1 (RNF28), MuRF2 (RNF29) and MuRF3 (RNF30) are a specific class of RING finger proteins expressed in striated muscle tissues that act as signaling molecules and cytoskeletal adaptors. The MuRF proteins contain a conserved N-terminal RING domain and zinc-binding B-box motif in addition to two coiled-coil motifs in their central regions. In muscle cells, MuRF2 regulates gene expression and protein turnover. It localizes to the cytoplasm, but under atrophic conditions it is detected in the nucleus. MuRF2 can form oligomers with various other proteins, including titin and myosin, during sarcomere assembly. Endogenous MuRF2 associates with the sarcomeric M-band in cardiomyocytes. There are at least four isoforms of MuRF2.

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. Pizon, V., et al. 2002. Transient association of titin and myosin with microtubules in nascent myofibrils directed by the MURF2 RING-finger protein. J. Cell Sci. 115: 4469-4482.
3. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 606469. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
4. McElhinny, A.S., et al. 2004. Muscle-specific RING finger-2 (MURF2) is important for microtubule, intermediate filament and sarcomeric M-line maintenance in striated muscle development. J. Cell Sci. 117: 3175-3188.
5. Tskhovrebova, L. and Trinick, J. 2005. Muscle disease: a giant feels the strain. Nat. Med. 11: 478-479.
6. Lange, S., et al. 2005. The kinase domain of titin controls muscle gene expression and protein turnover. Science 308: 1599-1603.
7. Witt, S.H., et al. 2005. MURF1 and MURF2 target a specific subset of myofibrillar proteins redundantly: towards understanding MURF-dependent muscle ubiquitination. J. Mol. Biol. 350: 713-722.

CHROMOSOMAL LOCATION

Genetic locus: TRIM55 (human) mapping to 8q13.1.

PRODUCT

MuRF2 siRNA (h) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see MuRF2 shRNA Plasmid (h): sc-61101-SH and MuRF2 shRNA (h) Lentiviral Particles: sc-61101-V as alternate gene silencing products.

For independent verification of MuRF2 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-61101A, sc-61101B and sc-61101C.

RESEARCH USE

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

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

MuRF2 siRNA (h) is recommended for the inhibition of MuRF2 expression in human cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 µM in 66 µl. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

GENE EXPRESSION MONITORING

MuRF2 (1A1): sc-517149 is recommended as a control antibody for monitoring of MuRF2 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor MuRF2 gene expression knockdown using RT-PCR Primer: MuRF2 (h)-PR: sc-61101-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.