SANTA CRUZ BIOTECHNOLOGY, INC.

STARS siRNA (h): sc-77702

BACKGROUND

STARS (striated muscle activator of Rho-dependent signaling), also known as ABRA (Actin-binding Rho-activating protein), is a 381 amino acid cytoplasmic protein. STARS localizes to the cytoskeleton, specifically, the I-band of the sarcomere and the sarcomeric structure between Z-lines, to a lesser extent. STARS is an activator of serum response factor (SRF)-dependent transcription, either by a mechanism requiring Rho-actin signaling or inducing nuclear translocation of MRTF-A or MRTF-B. STARS has been found to interact with ABLIM1, ABLIM2, ABLIM3. The gene that encodes STARS maps to human chromosome 8, which is made up of nearly 146 million bases and encodes about 800 genes.

REFERENCES

1. Wildenauer, D.B. and Schwab, S.G. 1999. Chromosomes 8 and 10 workshop. Am. J. Med. Genet. 88: 239-243.
2. Arai, A., et al. 2002. STARS, a striated muscle activator of Rho signaling and serum response factor-dependent transcription. J. Biol. Chem. 277: 24453-24459.
3. Kuwahara, K., et al. 2005. Muscle-specific signaling mechanism that links actin dynamics to serum response factor. Mol. Cell. Biol. 25: 3173-3181.
4. Nusbaum, C., et al. 2006. DNA sequence and analysis of human chromosome 8. Nature 439: 331-335.
5. Kuwahara, K., et al. 2007. Modulation of adverse cardiac remodeling by STARS, a mediator of MEF2 signaling and SRF activity. J. Clin. Invest. 117: 1324-1334.
6. Lamon, S., et al. 2009. Regulation of STARS and its downstream targets suggest a novel pathway involved in human skeletal muscle hypertrophy and atrophy. J. Physiol. 587: 1795-1803.

CHROMOSOMAL LOCATION

Genetic locus: ABRA (human) mapping to 8q23.1.

PRODUCT

STARS 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 STARS shRNA Plasmid (h): sc-77702-SH and STARS shRNA (h) Lentiviral Particles: sc-77702-V as alternate gene silencing products.

For independent verification of STARS (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-77702A, sc-77702B and sc-77702C.

RESEARCH USE

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

PROTOCOLS

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

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

STARS siRNA (h) is recommended for the inhibition of STARS 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

STARS (E-9): sc-393062 is recommended as a control antibody for monitoring of STARS 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 STARS gene expression knockdown using RT-PCR Primer: STARS (h)-PR: sc-77702-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.