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SANTA CRUZ BIOTECHNOLOGY, INC.

SCARA3 siRNA (m): sc-153248

BACKGROUND

SCARA3 (scavenger receptor class A, member 3), also known as CSR, APC7, CSR1, MSLR1 or MSRL1, is a ubiquitously expressed 606 amino acid single-pass type II membrane protein. Localized to the membrane of the endoplasmic reticulum (ER) and the Golgi apparatus, SCARA3 functions as a macrophage scavenger receptor-like protein that removes oxidative molecules or oxidation by-products from the cell. Via its ability to deplete reactive oxygen species, SCARA3 plays an important role in preventing oxidative stress within the cell. Expression of SCARA3 is upregulated in response to UV damage, further supporting its role as an oxidative scavenger. In addition, SCARA3 is down-regulated in prostate tumor cells, suggesting a possible role in tumor suppression. SCARA3 contains two collagen-like domains and is expressed as multiple isoforms due to alternative splicing events.

REFERENCES

1. Han, H.J., et al. 1998. CSR, a scavenger receptor-like protein with a protective role against cellular damage causedby UV irradiation and oxidative stress. Hum. Mol. Genet. 7: 1039-1046.
2. Han, H.J. and Nakamura, Y. 1998. Dinucleotide repeat polymorphism in the first intron of the CSR gene. J. Hum. Genet. 43: 212-213.
3. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 602728. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
4. Yu, Y.P., et al. 2004. Gene expression alterations in prostate cancer predicting tumor aggression and preceding development of malignancy. J. Clin. Oncol. 22: 2790-2799.
5. Cozen, A.E., et al. 2004. Macrophage-targeted overexpression of urokinase causes accelerated atherosclerosis, coronary artery occlusions, and premature death. Circulation 109: 2129-2135.
6. Yu, G., et al. 2006. CSR1 suppresses tumor growth and metastasis of prostate cancer. Am. J. Pathol. 168: 597-607.
7. Manabe, Y., et al. 2007. CSR1, the sole target of imidazolinone herbicide in *Arabidopsis thaliana*. Plant Cell Physiol. 48: 1340-1358.

CHROMOSOMAL LOCATION

Genetic locus: Scara3 (mouse) mapping to 14 D1.

PRODUCT

SCARA3 siRNA (m) 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 SCARA3 shRNA Plasmid (m): sc-153248-SH and SCARA3 shRNA (m) Lentiviral Particles: sc-153248-V as alternate gene silencing products.

For independent verification of SCARA3 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-153248A, sc-153248B and sc-153248C.

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

SCARA3 siRNA (m) is recommended for the inhibition of SCARA3 expression in mouse 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

SCARA3 (10-L): sc-100310 is recommended as a control antibody for monitoring of SCARA3 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 SCARA3 gene expression knockdown using RT-PCR Primer: SCARA3 (m)-PR: sc-153248-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

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.