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MLSN1 siRNA (h): sc-43936

BACKGROUND

The human melanocyte-specific gene melastatin, initially cloned from the retina, maps to chromosome 15q13.3. Melastatin protein, also designated MLSN1, is a 1,533 amino acid protein that is related to the transient receptor potential (Trp) calcium channel family of proteins, which mediate the transport of cations from the extracellular environment into the cytoplasm. MLSN1 expression is inversely proportional to melanocytic tumor proliferation, suggesting that normal levels of MLSN1 can suppress aggressive malignant melanoma growth. The downregulation of MLSN1 transcripts in malignant melanomas, such as primary cutaneous tumors, is a marker for metastasis and in some cases is independent of tumor thickness.

REFERENCES

- Hunter, J.J., et al. 1998. Chromosomal localization and genomic characterization of the mouse melastatin gene (MISN1). *Genomics* 54: 116-123.
- Duncan, L.M., et al. 1998. Downregulation of the novel gene melastatin correlates with potential for melanoma metastasis. *Cancer Res.* 58: 1515-1520.
- Deeds, J., et al. 2000. Patterns of melastatin mRNA expression in melanocytic tumors. *Hum. Pathol.* 31: 1346-1356.
- Fang, D. and Setaluri, V. 2000. Expression and upregulation of alternatively spliced transcripts of melastatin, a melanoma metastasis-related gene, in human melanoma cells. *Biochem. Biophys. Res. Commun.* 279: 53-61.
- Duncan, L.M., et al. 2001. Melastatin expression and prognosis in cutaneous malignant melanoma. *J. Clin. Oncol.* 19: 568-576.

CHROMOSOMAL LOCATION

Genetic locus: MLSN1 (human) mapping to 15q13.3.

PRODUCT

MLSN1 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see MLSN1 shRNA Plasmid (h): sc-43936-SH and MLSN1 shRNA (h) Lentiviral Particles: sc-43936-V as alternate gene silencing products.

For independent verification of MLSN1 (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-43936A, sc-43936B and sc-43936C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

MLSN1 siRNA (h) is recommended for the inhibition of MLSN1 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 μ M in 66 μ l. 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

MLSN1 (F-3): sc-515228 is recommended as a control antibody for monitoring of MLSN1 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-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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 MLSN1 gene expression knockdown using RT-PCR Primer: MLSN1 (h)-PR: sc-43936-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

- Hu, Q.M., et al. 2017. Induction of retinal-dependent calcium influx in human melanocytes by UVA or UVB radiation contributes to the stimulation of melanosome transfer. *Cell Prolif.* E-published.

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.