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SANTA CRUZ BIOTECHNOLOGY, INC.

MTUS1 siRNA (m): sc-149696

BACKGROUND

MTUS1 (mitochondrial tumor suppressor 1), also known as ATIP (angiotensin-II type 2 receptor (AT2)-interacting protein), MP44, GK1 or MTSG1, is a ubiquitously expressed protein with highest expression in brain tissues. MTUS1 is predominantly hydrophilic and contains a large coiled coil domain and two leucine zippers. It interacts with the C-terminal tail of AT2 and cooperates with this receptor to mediate the inhibition of growth factor-induced ERK 2 activation and cell proliferation. MTUS1 functions as a tumor suppressor and mutations in the gene encoding MTUS1 may result in hepatocellular carcinoma (HCC). Five transcript variants of MTUS1 are produced by alternative splicing events, namely ATIP1, ATIP2, ATIP3a, ATIP3b and ATIP4. ATIP1 exhibits cytosolic localization and ATIP4 localizes to the plasma membrane. ATIP2, ATIP3a and ATIP3b localize to the nucleus and are highly conserved throughout evolution, implying an important function for each in cellular homeostasis.

REFERENCES

1. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 609589. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
2. Ohi, R., et al. 2003. An inner centromere protein that stimulates the microtubule depolymerizing activity of a KinI kinesin. Dev. Cell 5: 309-321.
3. Nouet, S., et al. 2004. Trans-inactivation of receptor tyrosine kinases by novel angiotensin II AT2 receptor-interacting protein, ATIP. J. Biol. Chem. 279: 28989-28997.
4. Di Benedetto, M., et al. 2006. Structural organization and expression of human MTUS1, a candidate 8p22 tumor suppressor gene encoding a family of angiotensin II AT2 receptor-interacting proteins, ATIP. Gene 380: 127-136.
5. Lee, S., et al. 2006. Differential expression in normal-adenoma-carcinoma sequence suggests complex molecular carcinogenesis in colon. Oncol. Rep. 16: 747-754.
6. Di Benedetto, M., et al. 2006. Mutation analysis of the 8p22 candidate tumor suppressor gene ATIP/MTUS1 in hepatocellular carcinoma. Mol. Cell. Endocrinol. 252: 207-215.

CHROMOSOMAL LOCATION

Genetic locus: Mtus1 (mouse) mapping to 8 A4.

PRODUCT

MTUS1 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 MTUS1 shRNA Plasmid (m): sc-149696-SH and MTUS1 shRNA (m) Lentiviral Particles: sc-149696-V as alternate gene silencing products.

For independent verification of MTUS1 (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-149696A, sc-149696B and sc-149696C.

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

MTUS1 siRNA (m) is recommended for the inhibition of MTUS1 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

MTUS1 (A-4): sc-393120 is recommended as a control antibody for monitoring of MTUS1 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 MTUS1 gene expression knockdown using RT-PCR Primer: MTUS1 (m)-PR: sc-149696-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.