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SANTA CRUZ BIOTECHNOLOGY, INC.

MPP1 siRNA (m): sc-149533

BACKGROUND

The Kinesins constitute a large family of microtubule-dependent motor proteins which are responsible for the distribution of numerous organelles, vesicles and macromolecular complexes throughout the cell. Individual Kinesin members play crucial roles in cell division, intracellular transport and membrane trafficking events, including endocytosis and transcytosis. MPP1 (M-phase phosphoprotein 1), also known as KIF20B (kinesin family member 20B), MPHOSPH1 or KRMP1, is a 1,820 amino acid protein that localizes to both the nucleus and the cytoplasm and contains one kinesin-motor domain. Expressed in kidney, brain, testis and ovary, MPP1 functions as a plus-end directed motor enzyme that interacts with Pin1 and is required for the completion of cytokinesis. MPP1, which exists as multiple alternatively spliced isoforms termed 1-5, is subject to post-translational phosphorylation, probably by ATM or ATR.

REFERENCES

1. Westendorf, J.M., et al. 1994. Cloning of cDNAs for M-phase phosphoproteins recognized by the MPM2 monoclonal antibody and determination of the phosphorylated epitope. Proc. Natl. Acad. Sci. USA 91: 714-718.
2. Matsumoto-Taniura, N., et al. 1996. Identification of novel M phase phosphoproteins by expression cloning. Mol. Biol. Cell 7: 1455-1469.
3. Fritzler, M.J., et al. 2000. Autoantibodies from patients with idiopathic ataxia bind to M-phase phosphoprotein-1 (MPP1). J. Investig. Med. 48: 28-39.
4. Kamimoto, T., et al. 2001. Identification of a novel kinesin-related protein, KRMP1, as a target for mitotic peptidyl-prolyl isomerase Pin1. J. Biol. Chem. 276: 37520-37528.
5. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 605498. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
6. Abaza, A., et al. 2003. M phase phosphoprotein 1 is a human plus-end-directed kinesin-related protein required for cytokinesis. J. Biol. Chem. 278: 27844-27852.

CHROMOSOMAL LOCATION

Genetic locus: Kif20b (mouse) mapping to 19 C2.

PRODUCT

MPP1 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 MPP1 shRNA Plasmid (m): sc-149533-SH and MPP1 shRNA (m) Lentiviral Particles: sc-149533-V as alternate gene silencing products.

For independent verification of MPP1 (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-149533A, sc-149533B and sc-149533C.

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

MPP1 siRNA (m) is recommended for the inhibition of MPP1 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor MPP1 gene expression knockdown using RT-PCR Primer: MPP1 (m)-PR: sc-149533-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.