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SANTA CRUZ BIOTECHNOLOGY, INC.

MPP4 siRNA (m): sc-149536

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Progression of cells from interphase to mitosis involves alterations in cell structures and activities. The transition from G_2 to M phase is induced by M phase-promoting factor (MPF). In M phase, many proteins are phosphorylated directly by MPF or indirectly by kinases activated by MPF. These M phase phosphoproteins (MPPs), also known as MPHOSPHs, permit disassembly of interphase structures and generation of M phase enzymatic activities and structures. MPP4, also known as membrane protein, palmitoylated 4, MAGUK p55 subfamily member 4, ALS2CR5, discs large homolog 6 (DLG6), or amyotrophic lateral sclerosis 2 chromosomal region candidate gene 5 protein, is a 637 amino acid protein and member of the MAGUK family that localizes to cytoplasm and likely plays a role in the development of retinal photoreceptors. MPP4 is highly expressed in retina, and weakly expressed in testis and brain. MPP4 contains one guanylate kinase-like domain, one SH3 domain, one PDZ (DHR) domain and two L27 domains. Due to alternative splicing events, five MPP4 isoforms exist. Studies suggest MPP4 may be responsible for autosomal recessive retinitis pigmentosa 26 (RP26), as the two genes co-localize on human chromosome 2q33.1.

REFERENCES

1. Bayes, M., et al. 1998. A new autosomal recessive retinitis pigmentosa locus maps on chromosome 2q31-q33. J. Med. Genet. 35: 141-145.
2. Stöhr, H., et al. 2001. Cloning and characterization of the human retina-specific gene MPP4, a novel member of the p55 subfamily of MAGUK proteins. Genomics 74: 377-384.
3. Online Mendelian Inheritance in Man, OMIM™. 2001. Johns Hopkins University, Baltimore, MD. MIM Number: 606575. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
4. Conte, I., et al. 2002. Characterization of MPP4, a gene highly expressed in photoreceptor cells, and mutation analysis in retinitis pigmentosa. Gene 297: 33-38.
5. Kantardzhieva, A., et al. 2005. MPP5 recruits MPP4 to the CRB1 complex in photoreceptors. Invest. Ophthalmol. Vis. Sci. 46: 2192-2201.
6. Stöhr, H., et al. 2005. Membrane-associated guanylate kinase proteins MPP4 and MPP5 associate with Veli3 at distinct intercellular junctions of the neurosensory retina. J. Comp. Neurol. 481: 31-41.

CHROMOSOMAL LOCATION

Genetic locus: Mpp4 (mouse) mapping to 1 C1.3.

PRODUCT

MPP4 siRNA (m) is a target-specific 19-25 nt siRNA 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 MPP4 shRNA Plasmid (m): sc-149536-SH and MPP4 shRNA (m) Lentiviral Particles: sc-149536-V as alternate gene silencing products.

RESEARCH USE

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

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

MPP4 siRNA (m) is recommended for the inhibition of MPP4 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

MPP4 (B-2): sc-166396 is recommended as a control antibody for monitoring of MPP4 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 MPP4 gene expression knockdown using RT-PCR Primer: MPP4 (m)-PR: sc-149536-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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