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SANTA CRUZ BIOTECHNOLOGY, INC.

MPDZ siRNA (m): sc-149528

BACKGROUND

MPDZ (multiple PDZ domain protein), also known as MUPP1, is a 2,042 amino acid peripheral membrane protein that co-localizes with SR-2C on the apical membrane of epithelial choroid plexus cells. Expressed in heart, brain, placenta, liver, skeletal muscle, kidney and pancreas, MPDZ causes clustering of SR-2C, a serotonin receptor, at the cell surface. MPDZ is member of the NMDAR signaling complex that is involved in regulating AMPAR potentiation and synaptic plasticity in excitatory synapses. As a tight junction protein in epithelial cells, MPDZ interacts with G protein-coupled receptor SSTR3 and together regulate transepithelial permeability in a pertussis toxin sensitive manner. MPDZ along with KIR4.2 may form a complex with other proteins in the nephron and act to regulate ion transport. MPDZ contains one L27 domain and 13 PDZ domains.

REFERENCES

1. Sitek, B., et al. 2003. Expression of MUPP1 protein in mouse brain. Brain Res. 970: 178-187.
2. Sharma, S.C., et al. 2007. Design, synthesis, and evaluation of linear and cyclic peptide ligands for PDZ10 of the multi-PDZ domain protein MUPP1. Biochemistry 46: 12709-12720.
3. Lanaspa, M.A., et al. 2007. The tight junction protein, MUPP1, is up-regulated by hypertonicity and is important in the osmotic stress response in kidney cells. Proc. Natl. Acad. Sci. USA 104: 13672-13677.
4. Estevez, M.A., et al. 2008. The neuronal Rho A GEF, Tech, interacts with the synaptic multi-PDZ-domain-containing protein, MUPP1. J. Neurochem. 106: 1287-1297.
5. Karpyak, V.M., et al. 2009. Sequence variations of the human MPDZ gene and association with alcoholism in subjects with European ancestry. Alcohol. Clin. Exp. Res. 33: 712-721.
6. Sindic, A., et al. 2009. MUPP1 complexes renal K^+ channels to alter cell surface expression and whole cell currents. Am. J. Physiol. Renal Physiol. 297: F36-F45.
7. Liew, C.W., et al. 2009. Interaction of the human somatostatin receptor 3 with the multiple PDZ domain protein MUPP1 enables somatostatin to control permeability of epithelial tight junctions. FEBS Lett. 583: 49-54.

CHROMOSOMAL LOCATION

Genetic locus: Mpdz (mouse) mapping to 4 C3.

PRODUCT

MPDZ 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 MPDZ shRNA Plasmid (m): sc-149528-SH and MPDZ shRNA (m) Lentiviral Particles: sc-149528-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

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

MPDZ (43): sc-136293 is recommended as a control antibody for monitoring of MPDZ 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 MPDZ gene expression knockdown using RT-PCR Primer: MPDZ (m)-PR: sc-149528-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.