

CD-MPR siRNA (m): sc-45451

BACKGROUND

CD-MPR (cation-dependent mannose-6-phosphate receptor) is an oligomeric transmembrane protein that plays a critical role in the intracellular delivery of phosphorylated lysosomal enzymes from the *trans*-Golgi network (TGN). Intracellular trafficking of CD-MPR is mediated by sorting signals in its 67 amino acid cytoplasmic tail, which prevent it from entering the lysosome, where it would be degraded. CD-MPR is predominantly expressed in mouse testicular germ cells and shows differentiated expression during maturation of rat spermatozoa. Increased expression of CD-MPR in Alzheimer's disease and the location of the CD-MPR gene next to a region on chromosome 12 which is possibly linked to the disease indicate that CD-MPR may play a role in Alzheimer's disease.

REFERENCES

1. Sleat, D.E., et al. 1997. Ligand binding specificities of the two mannose 6-phosphate receptors. *J. Biol. Chem.* 272: 731-738.
2. Schweizer, A., et al. 1997. Proper sorting of the cation-dependent mannose 6-phosphate receptor in endosomes depends on a pair of aromatic amino acids in its cytoplasmic tail. *Proc. Natl. Acad. Sci. USA* 94: 14471-14476.
3. Olson, L.J., et al. 1999. Mutational analysis of the binding site residues of the bovine cation-dependent mannose 6-phosphate receptor. *J. Biol. Chem.* 274: 36905-36911.
4. Chayko, C.A., et al. 2000. Targeted disruption of the cation-dependent or cation-independent mannose 6-phosphate receptor does not decrease the content of acid glycosidases in the acrosome. *J. Androl.* 21: 944-953.

CHROMOSOMAL LOCATION

Genetic locus: M6pr (mouse) mapping to 6 F1.

PRODUCT

CD-MPR 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see CD-MPR shRNA Plasmid (m): sc-45451-SH and CD-MPR shRNA (m) Lentiviral Particles: sc-45451-V as alternate gene silencing products.

For independent verification of CD-MPR (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-45451A, sc-45451B and sc-45451C.

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

CD-MPR siRNA (m) is recommended for the inhibition of CD-MPR 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 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

CD-MPR (H-7): sc-365196 is recommended as a control antibody for monitoring of CD-MPR 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 CD-MPR gene expression knockdown using RT-PCR Primer: CD-MPR (m)-PR: sc-45451-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

1. Sun, M., et al. 2020. Control of Rab7a activity and localization through endosomal type Igamma PIP 5-kinase is required for endosome maturation and lysosome function. *FASEB J.* 34: 2730-2748.

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.