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SANTA CRUZ BIOTECHNOLOGY, INC.

MREG siRNA (m): sc-149550

BACKGROUND

The photoreceptor rod cell that is responsible for vision under conditions of low light consists of stacked arrays of disk membranes that make up its outer segment portion. Regulated by complex biochemical mechanisms, the rod outer segment is under constant renewal as new disks form at the base. MREG (melanoregulin), also known as DSU (dilute suppressor protein homolog) or WDT2, is thought to play a role in membrane fusion and in regulating the biogenesis of disk membranes of photoreceptor rods. MREG interacts with RDS (also known as Peripherin-2), a photoreceptor specific tetraspanin protein that is required to maintain normal cell structure during the renewal process of membrane fusion. MREG is 214 amino acids in length, is expressed in photoreceptor cells and and is expressed as two isoforms due to alternative splicing.

REFERENCES

1. Roof, D.J., et al. 1982. Surfaces of rod photoreceptor disk membranes: light-activated enzymes. J. Cell Biol. 95: 501-509.
2. Boesze-Battaglia, K., et al. 1996. Differential membrane protein phosphorylation in bovine retinal rod outer segment disk membranes as a function of disk age. Biosci. Rep. 16: 289-297.
3. Poetsch, A., et al. 2001. The cGMP-gated channel and related glutamic acid-rich proteins interact with Peripherin-2 at the rim region of rod photoreceptor disc membranes. J. Biol. Chem. 276: 48009-48016.
4. Loewen, C.J., et al. 2003. The role of subunit assembly in Peripherin-2 targeting to rod photoreceptor disk membranes and retinitis pigmentosa. Mol. Biol. Cell 14: 3400-3413.
5. Damek-Poprawa, M., et al. 2005. A novel tetraspanin fusion protein, Peripherin-2, requires a region upstream of the fusion domain for activity. J. Biol. Chem. 280: 9217-9224.
6. Boesze-Battaglia, K., et al. 2007. The tetraspanin protein Peripherin-2 forms a complex with melanoregulin, a putative membrane fusion regulator. Biochemistry 46: 1256-1272.
7. SWISS-PROT/TrEMBL (Q8N565). World Wide Web URL: http://www.expasy.ch/sprot/sprot-top.html

CHROMOSOMAL LOCATION

Genetic locus: Mreg (mouse) mapping to 1 C3.

PRODUCT

MREG 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 MREG shRNA Plasmid (m): sc-149550-SH and MREG shRNA (m) Lentiviral Particles: sc-149550-V as alternate gene silencing products.

For independent verification of MREG (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-149550A, sc-149550B and sc-149550C.

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

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

MREG (A-6): sc-374144 is recommended as a control antibody for monitoring of MREG 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 MREG gene expression knockdown using RT-PCR Primer: MREG (m)-PR: sc-149550-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.