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SANTA CRUZ BIOTECHNOLOGY, INC.

PTP-MEG2 siRNA (m): sc-44671

BACKGROUND

Protein tyrosine phosphatases (PTPs) and protein tyrosine kinases (PTKs) play a ubiquitous role in the regulation of tyrosine phosphorylation-mediated signaling pathways. Tyrosine-phosphorylated proteins can be dephosphorylated through the action of PTPs, which therefore are likely to play a regulatory role in the control of cellular growth and differentiation. PTP-MEG2 (also known as PTPN9) is a cytoplasmic nonreceptor protein involved in the transfer of hydrophobic ligands and possibly in functions of the Golgi apparatus. It is involved in the development of erythroid cells and has an N-terminal Sec14p homology domain. The human gene for PTP-PEST, another cytoplasmic nonreceptor protein, maps to chromosome 7q11.23 and encodes a 780 amino acid cytosolic nonreceptor protein. PTP-PEST is expressed abundantly in a wide variety of hemopoietic cell types, including B cells and T cells.

REFERENCES

1. Gu, M., et al. 1992. Cloning and expression of a cytosolic megakaryocyte protein-tyrosine-phosphatase with sequence homology to retinaldehyde-binding protein and yeast Sec14p. Proc. Natl. Acad. Sci. USA 89: 2980-2984.
2. Qi, Y., et al. 2002. Purification and characterization of protein tyrosine phosphatase PTP-MEG2. J. Cell. Biochem. 86: 79-89.
3. Wang, X., et al. 2002. Enlargement of secretory vesicles by protein tyrosine phosphatase PTP-MEG2 in rat basophilic leukemia mast cells and Jurkat T cells. J. Immunol. 168: 4612-4619.
4. Huynh, H., et al. 2003. Homotypic secretory vesicle fusion induced by the protein tyrosine phosphatase MEG2 depends on polyphosphoinositides in T cells. J. Immunol. 171: 6661-6671.
5. Xu, M.J., et al. 2003. PTP-MEG2 is activated in polycythemia vera erythroid progenitor cells and is required for growth and expansion of erythroid cells. Blood 102: 4354-4360.
6. Zhao, R., et al. 2003. Specific interaction of protein tyrosine phosphatase-MEG2 with phosphatidylserine. J. Biol. Chem. 278: 22609-22614.

CHROMOSOMAL LOCATION

Genetic locus: Ptpn9 (mouse) mapping to 9 B.

PRODUCT

PTP-MEG2 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 PTP-MEG2 shRNA Plasmid (m): sc-44671-SH and PTP-MEG2 shRNA (m) Lentiviral Particles: sc-44671-V as alternate gene silencing products.

For independent verification of PTP-MEG2 (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-44671A, sc-44671B and sc-44671C.

PROTOCOLS

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

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

PTP-MEG2 siRNA (m) is recommended for the inhibition of PTP-MEG2 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

PTP-MEG2 (D-5): sc-271052 is recommended as a control antibody for monitoring of PTP-MEG2 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 PTP-MEG2 gene expression knockdown using RT-PCR Primer: PTP-MEG2 (m)-PR: sc-44671-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.