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PTP-MEG2 shRNA (m) Lentiviral Particles: sc-44671-V

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 non-receptor 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

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- Qi, Y., et al. 2002. Purification and characterization of protein tyrosine phosphatase PTP-MEG2. *J. Cell. Biochem.* 86: 79-89.
- 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.
- 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.
- 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 shRNA (m) Lentiviral Particles is a pool of concentrated, transduction-ready viral particles containing 3 target-specific constructs that encode 19-25 nt (plus hairpin) shRNA designed to knock down gene expression. Each vial contains 200 μ l frozen stock containing 1.0×10^6 infectious units of virus (IFU) in Dulbecco's Modified Eagle's Medium with 25 mM HEPES pH 7.3. Suitable for 10-20 transductions. Also see PTP-MEG2 siRNA (m): sc-44671 and PTP-MEG2 shRNA Plasmid (m): sc-44671-SH as alternate gene silencing products.

STORAGE

Store lentiviral particles at -80° C. Stable for at least one year from the date of shipment. Once thawed, particles can be stored at 4° C for up to one week. Avoid repeated freeze thaw cycles.

PROTOCOLS

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

APPLICATIONS

PTP-MEG2 shRNA (m) Lentiviral Particles is recommended for the inhibition of PTP-MEG2 expression in mouse cells.

SUPPORT REAGENTS

Control shRNA Lentiviral Particles: sc-108080. Available as 200 μ l frozen viral stock containing 1.0×10^6 infectious units of virus (IFU); contains an shRNA construct encoding a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA.

GENE EXPRESSION MONITORING

PTP-MEG2 (C-16): sc-32671 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 (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

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 μ l). Annealing temperature for the primers should be $55-60^\circ$ C and the extension temperature should be $68-72^\circ$ C.

BIOSAFETY

Lentiviral particles can be employed in standard Biosafety Level 2 tissue culture facilities (and should be treated with the same level of caution as with any other potentially infectious reagent). Lentiviral particles are replication-incompetent and are designed to self-inactivate after transduction and integration of shRNA constructs into genomic DNA of target cells.

RESEARCH USE

The purchase of this product conveys to the buyer the nontransferable right to use the purchased amount of the product and all replicates and derivatives for research purposes conducted by the buyer in his laboratory only (whether the buyer is an academic or for-profit entity). The buyer cannot sell or otherwise transfer (a) this product (b) its components or (c) materials made using this product or its components to a third party, or otherwise use this product or its components or materials made using this product or its components for Commercial Purposes.