SANTA CRUZ BIOTECHNOLOGY, INC.

PTP-MEG1 siRNA (h): sc-62904

BACKGROUND

Protein tyrosine phosphorylation plays a key role in the regulation of several fundamental cellular processes, including cell growth, migration and differentiation. The regulation of phosphorylation is controlled by the opposing actions of protein tyrosine kinases and protein tyrosine phosphatase. PTP-MEG1 (protein-tyrosine phosphatase MEG1), also known as PTPN4 (protein tyrosine phosphatase, non-receptor type 4 (megakaryocyte)), MEG, or PTPMEG, is a 926 amino acid protein that belongs to the protein tyrosine phosphatase (PTP) family. Containing a C-terminal PTP domain and an N-terminal domain homologous to the band 4.1 superfamily of cytoskeletal-associated proteins, PTP-MEG1 localizes to the cytoplasmic face of the plasma membrane. PTP-MEG1 may play a role at junctions between the membrane and the cytoskeleton, and may be involved in signal transduction. PTP-MEG1 is encoded by a gene located on human chromosome 2q14.2.

REFERENCES

1. Mosinger, B., Jr., et al. 1992. Cloning and characterization of a mouse cDNA encoding a cytoplasmic protein-tyrosine phosphatase. Proc. Natl. Acad. Sci. USA 89: 499-503.
2. Han, S., et al. 2000. Cytoskeletal protein tyrosine phosphatase PTPH1 reduces T cell antigen receptor signaling. Eur. J. Immunol. 30: 1318-1325.
3. Gjörloff-Wingren, A., et al. 2000. Subcellular localization of intracellular protein tyrosine phosphatases in T cells. Eur. J. Immunol. 30: 2412-2421.
4. Heneberg, P. and Dráber, P. 2002. Nonreceptor protein tyrosine and lipid phosphatases in type I fcε receptor-mediated activation of mast cells and basophils. Int. Arch. Allergy Immunol. 128: 253-263.
5. Shiota, M., et al. 2003. Protein tyrosine phosphatase PTP20 induces Actin cytoskeleton reorganization by dephosphorylating p190 RhoGAP in rat ovarian granulosa cells stimulated with follicle-stimulating hormone. Mol. Endocrinol. 17: 534-549.
6. Shiura, H., et al. 2005. Meg1/Grb10 overexpression causes postnatal growth retardation and Insulin resistance via negative modulation of the IGF1R and IR cascades. Biochem. Biophys. Res. Commun. 329: 909-916.

CHROMOSOMAL LOCATION

Genetic locus: PTPN4 (human) mapping to 2q14.2.

PRODUCT

PTP-MEG1 siRNA (h) 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-MEG1 shRNA Plasmid (h): sc-62904-SH and PTP-MEG1 shRNA (h) Lentiviral Particles: sc-62904-V as alternate gene silencing products.

For independent verification of PTP-MEG1 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-62904A, sc-62904B and sc-62904C.

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-MEG1 siRNA (h) is recommended for the inhibition of PTP-MEG1 expression in human 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor PTP-MEG1 gene expression knockdown using RT-PCR Primer: PTP-MEG1 (h)-PR: sc-62904-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.