SANTA CRUZ BIOTECHNOLOGY, INC.

Pez siRNA (m): sc-62778

BACKGROUND

Pez (protein tyrosine phosphatase Pez), also known as PTP36 or tyrosine-protein phosphatase non-receptor type 14 (PTPN14), is a member of the non-receptor class subfamily of the protein tyrosine phosphatase family. Protein tyrosine phosphatases (PTPs) are involved in the regulation of a variety of cellular processes. Pez is a cytosolic protein (concentrated at the intercellular junctions) that is expressed in various tissues including placenta, lung, kidney and skeletal muscle. It contains one protein tyrosine phosphatase domain and one FERM (4.1, Ezrin, Radixin, Moesin) domain. In actively proliferating cells, where cell-cell contacts have been disrupted, Pez translocates to the nucleus. TGFβ, a protein known to inhibit cell proliferation, can inhibit the nuclear translocation of Pez. Localization of Pez is also regulated by serum concentrations; higher serum concentrations can lead to the accumulation of Pez in the nucleus. This strongly suggests a role for Pez in cell proliferation.

REFERENCES

1. Smith, A.L., et al. 1995. Pez: a novel human cDNA encoding protein tyrosine phosphatase- and Ezrin-like domains. Biochem. Biophys. Res. Commun. 209: 959-965.
2. Ogata, M., et al. 1999. Effects of overexpression of PTP36, a putative protein tyrosine phosphatase, on cell adhesion, cell growth, and cytoskeletons in HeLa cells. J. Biol. Chem. 274: 12905-12909.
3. Ogata, M., et al. 1999. Regulation of phosphorylation level and distribution of PTP36, a putative protein tyrosine phosphatase, by cell-substrate adhesion. J. Biol. Chem. 274: 20717-20724.
4. Aoyama, K., et al. 1999. Characterization of newly identified four isoforms for a putative cytosolic protein tyrosine phosphatase PTP36. Biochem. Biophys. Res. Commun. 266: 523-531.
5. Wadham, C., et al. 2000. Translocation of protein tyrosine phosphatase Pez/PTPD2/PTP36 to the nucleus is associated with induction of cell proliferation. J. Cell Sci. 113: 3117-3123.

CHROMOSOMAL LOCATION

Genetic locus: Ptpn14 (mouse) mapping to 1 H6.

PRODUCT

Pez 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 Pez shRNA Plasmid (m): sc-62778-SH and Pez shRNA (m) Lentiviral Particles: sc-62778-V as alternate gene silencing products.

For independent verification of Pez (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-62778A, sc-62778B and sc-62778C.

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

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

Pez (F-12): sc-373766 is recommended as a control antibody for monitoring of Pez 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 Pez gene expression knockdown using RT-PCR Primer: Pez (m)-PR: sc-62778-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.