SANTA CRUZ BIOTECHNOLOGY, INC.

PC-1 siRNA (m): sc-40812

BACKGROUND

PC-1, also known as ectonucleotide pyrophosphatase/phosphodiesterase 1 (ENPP1) or membrane component, chromosome 6, surface marker-1 (M6S1), is the human homolog of Ly-41 in the mouse. PC-1 is a homodimer with restricted tissue distribution, being first characterized in plasma cells. In addition to its expression on plasma cells, PC-1 is expressed on hepatocytes, renal tubules, salivary duct epithelium, epididymis, capillary endothelium in the brain and chondrocytes. Most patients with non-insulin-dependent diabetes mellitus (NIDDM) are resistant to both endogenous and exogenous Insulin. Insulin resistance precedes the onset of this disease, suggesting that it may be an initial abnormality. It has been suggested that PC-1 may have a role in the Insulin resistance of NIDDM by direct interaction with the receptor a subunit. The gene which encodes PC-1 maps to human chromosome 6q23.2, which is a common site for deletions in human lymphoid neoplasia.

REFERENCES

1. Takahashi, T., et al. 1970. Surface alloantigens of plasma cells. J. Exp. Med. 131: 1325-1341.
2. Harahap, A.R., et al. 1988. Distribution of the murine plasma cell antigen PC-1 in non-lymphoid tissues. J. Immun. 141: 2317-2320.
3. Buckley, M.F., et al. 1990. Plasma cell membrane glycoprotein PC-1: cDNA cloning of the human molecule, amino acid sequence, and chromosomal location. J. Biol. Chem. 265: 17506-17511.
4. Buckley, M.F., et al. 1992. Plasma cell membrane glycoprotein gene Pca-1 (alkaline phosphodiesterase I) is linked to the proto-oncogene Myb on mouse chromosome 10. Immunogenetics 36: 199-201.
5. Maddux, B.A., et al. 2000. Membrane glycoprotein PC-1 inhibition of Insulin receptor function occurs via direct interaction with the receptor α-subunit. Diabetes 49: 13-19.
6. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 173335. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/

CHROMOSOMAL LOCATION

Genetic locus: Enpp1 (mouse) mapping to 10 A4.

PRODUCT

PC-1 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 PC-1 shRNA Plasmid (m): sc-40812-SH and PC-1 shRNA (m) Lentiviral Particles: sc-40812-V as alternate gene silencing products.

For independent verification of PC-1 (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-40812A, sc-40812B and sc-40812C.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

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

PC-1 siRNA (m) is recommended for the inhibition of PC-1 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

PC-1 (H-7): sc-393419 is recommended as a control antibody for monitoring of PC-1 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 PC-1 gene expression knockdown using RT-PCR Primer: PC-1 (m)-PR: sc-40812-PR (20 µl, 599 bp). 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.