SANTA CRUZ BIOTECHNOLOGY, INC.

PEDF siRNA (h): sc-40947

BACKGROUND

Pigment epithelium-derived growth factor (PEDF), also known as EPC-1 (early population doubling level cDNA-1), is a glycoprotein found naturally in the normal eye. PEDF has reported neuroprotective and differentiation properties and is secreted in abundance by retinal pigment epithelium cells. It belongs to the serine protease inhibitor (Serpin) superfamily and has been reported to inhibit angiogenesis and proliferation of several cell types. The "pooling" of PEDF within the interphotoreceptor matrix places this molecule in a prime physical location to affect the underlying neural retina. Additionally, PEDF induces neuronal differentiation and promotes survival of neurons of the central nervous system from degeneration caused by serum withdrawal or glutamate cytotoxicity.

REFERENCES

1. Cayouette, M., et al. 1999. Pigment epithelium-derived factor delays the death of photoreceptors in mouse models of inherited retinal degenerations. Neurobiol. Dis. 6: 523-532.
2. Cao, W., et al. 1999. Pigment epithelium-derived factor protects cultured retinal neurons against hydrogen peroxide-induced cell death. J. Neurosci. Res. 57: 789-800.
3. Coljee, V.W., et al. 2000. Regulation of EPC1/PEDF in normal human fibroblasts is posttranscriptional. J. Cell. Biochem. 79: 442-452.

CHROMOSOMAL LOCATION

Genetic locus: SERPINF1 (human) mapping to 17p13.3.

PRODUCT

PEDF 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 PEDF shRNA Plasmid (h): sc-40947-SH and PEDF shRNA (h) Lentiviral Particles: sc-40947-V as alternate gene silencing products.

For independent verification of PEDF (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-40947A, sc-40947B and sc-40947C.

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

PEDF siRNA (h) is recommended for the inhibition of PEDF 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.

GENE EXPRESSION MONITORING

PEDF (D-10): sc-390172 is recommended as a control antibody for monitoring of PEDF 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 PEDF gene expression knockdown using RT-PCR Primer: PEDF (h)-PR: sc-40947-PR (20 µl, 480 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Li, F., et al. 2013. Pigment epithelium-derived factor enhances differentiation and mineral deposition of human mesenchymal stem cells. Stem Cells 31: 2714-2723.
2. Kuo, H.F., et al. 2016. Pigment epithelium-derived factor mediates autophagy and apoptosis in myocardial hypoxia/reoxygenation injury. PLoS ONE 11: e0156059.
3. Eslani, M., et al. 2017. Corneal mesenchymal stromal cells are directly antiangiogenic via PEDF and sFLT-1. Invest. Ophthalmol. Vis. Sci. 58: 5507-5517.
4. Huang, W.T., et al. 2018. Pigment epithelium-derived factor inhibits lung cancer migration and invasion by upregulating exosomal thrombospondin 1. Cancer Lett. 442: 287-298.
5. Eslani, M., et al. 2018. Cornea-derived mesenchymal stromal cells therapeutically modulate macrophage immunophenotype and angiogenic function. Stem Cells 36: 775-784.

RESEARCH USE

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