SANTA CRUZ BIOTECHNOLOGY, INC.

PDGF-D siRNA (h): sc-39709

BACKGROUND

Platelet-derived growth factor (PDGF) refers to a family of disulphide-bonded dimeric isoforms that are important for growth and survival, and which function in several types of connective tissue cell. There are four members of the platelet-derived growth factor (PDGF) family: PDGF-A, PDGF-B, PDGF-C and PDGF-D (spinal cord-derived growth factor-B or iris-expressed growth factor). Their biological effects are mediated via two tyrosine kinase receptors, PDGFR-α and PDGFR-β. PDGF-mediated signaling is critical for development of many organ systems. PDGF-D has a two-domain structure similar to PDGF-C and is secreted as a disulphide-linked homodimer, PDGF-DD. Upon limited proteolysis, PDGF-DD is activated and becomes a specific agonistic ligand for PDGFR-β. PDGF-D is expessed in fibroblastic adventitial cells, cultured endothelial cells and in a variety of tumor cell lines.

REFERENCES

1. Bergsten, E., et al. 2001. PDGF-D is a specific, protease-activated ligand for the PDGF-β-receptor. Nat. Cell Biol. 3: 512-516.
2. LaRochelle, W.J., et al. 2001. PDGF-D, a new protease-activated growth factor. Nat. Cell Biol. 3: 517-521.
3. Hamada, T., et al. 2001. Molecular cloning of SCDGF-B, a novel growth factor homologous to SCDGF/PDGF-C/fallotein. Biochem. Biophys. Res. Commun. 280: 733-737.
4. Uutela, M., et al. 2001. Chromosomal location, exon structure, and vascular expression patterns of the human PDGFC and PDGFC genes. Circulation 103: 2242-2247.

CHROMOSOMAL LOCATION

Genetic locus: PDGFD (human) mapping to 11q22.3.

PRODUCT

PDGF-D 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 PDGF-D shRNA Plasmid (h): sc-39709-SH and PDGF-D shRNA (h) Lentiviral Particles: sc-39709-V as alternate gene silencing products.

For independent verification of PDGF-D (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-39709A, sc-39709B and sc-39709C.

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

PDGF-D siRNA (h) is recommended for the inhibition of PDGF-D 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

PDGF-D (E-7): sc-137029 is recommended as a control antibody for monitoring of PDGF-D 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 PDGF-D gene expression knockdown using RT-PCR Primer: PDGF-D (h)-PR: sc-39709-PR (20 µl, 581 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Wang, Z., et al. 2007. Down-regulation of platelet-derived growth factor-D inhibits cell growth and angiogenesis through inactivation of Notch-1 and nuclear factor-κB signaling. Cancer Res. 67: 11377-11385.
2. Gondi, C.S., et al. 2010. Human umbilical cord blood stem cells show PDGF-D-dependent glioma cell tropism *in vitro* and *in vivo*. Neuro Oncol. 12: 453-465.
3. Han, Y., et al. 2013. Down-regulation of platelet-derived growth factor-D expression blockades NF-κB pathway to inhibit cell proliferation and invasion as well as induce apoptosis in esophageal squamous cell carcinoma. Mol. Biol. Rep. 40: 2473-2483.

RESEARCH USE

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