

# PTN siRNA (h): sc-39713

## BACKGROUND

Pleiotrophin (PTN) and midkine (MK) comprise a family of structurally related, developmentally regulated genes. Human PTN is synthesized as a 168 amino acid precursor which is subsequently cleaved to generate a 136 amino acid protein. Human PTN is approximately 50% identical to human MK, with conservation of all ten cysteines. Cells reported to express PTN include osteoblasts, chondrocytes, fibroblasts, astrocytes, oligodendroglia, Schwann cells, neurons, pituitary cells and Leydig cells. PTN is a heparin-binding growth factor that functions as a weak mitogen and promotes neurite outgrowth from embryonic brain neurons. PTN is expressed at high levels in many tissues during fetal development but becomes restricted to the brain in adult animals.

## REFERENCES

1. Li, Y.S., et al. 1990. Cloning and expression of a developmentally regulated protein that induces mitogenic and neurite outgrowth activity. *Science* 250: 1690-1694.
2. Bohlen, P., et al. 1991. HBNF and MK, members of a novel gene family of heparin-binding proteins with potential roles in embryogenesis and brain function. *Prog. Growth Factor Res.* 3: 143-157.
3. Raulais, D., et al. 1991. A new heparin binding protein regulated by retinoic acid from chick embryo. *Biochem. Biophys. Res. Commun.* 174: 708-715.
4. Li, Y.S., et al. 1992. Characterization of the human pleiotrophin gene: promoter region and chromosomal localization. *J. Biol. Chem.* 267: 26011-26016.

## CHROMOSOMAL LOCATION

Genetic locus: PTN (human) mapping to 7q33.

## PRODUCT

PTN 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see PTN shRNA Plasmid (h): sc-39713-SH and PTN shRNA (h) Lentiviral Particles: sc-39713-V as alternate gene silencing products.

For independent verification of PTN (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-39713A, sc-39713B and sc-39713C.

## 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  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

PTN siRNA (h) is recommended for the inhibition of PTN 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  $\mu$ M in 66  $\mu$ l. 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

PTN (H-6): sc-74443 is recommended as a control antibody for monitoring of PTN 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-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  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-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  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 PTN gene expression knockdown using RT-PCR Primer: PTN (h)-PR: sc-39713-PR (20  $\mu$ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## SELECT PRODUCT CITATIONS

1. Kong, Y., et al. 2012. Pleiotrophin is a potential colorectal cancer prognostic factor that promotes VEGF expression and induces angiogenesis in colorectal cancer. *Int. J. Colorectal Dis.* 27: 287-298.
2. Xiao, J., et al. 2014. MicroRNA-137 modulates pancreatic cancer cells tumor growth, invasion and sensitivity to chemotherapy. *Int. J. Clin. Exp. Pathol.* 7: 7442-7450.
3. Zhu, X., et al. 2015. The effects of pleiotrophin in proliferative diabetic retinopathy. *PLoS ONE* 10: e0115523.
4. Ding, X., et al. 2017. The effects of pleiotrophin in proliferative vitreoretinopathy. *Graefes Arch. Clin. Exp. Ophthalmol.* 255: 873-884.

## RESEARCH USE

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