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### SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

[mail@szabo-scandic.com](mailto:mail@szabo-scandic.com)

[www.szabo-scandic.com](http://www.szabo-scandic.com)

[linkedin.com/company/szaboscandic](https://www.linkedin.com/company/szaboscandic) 

# PIGF siRNA (h): sc-44027

## BACKGROUND

The onset of angiogenesis is believed to be an early event in tumorigenesis and may facilitate tumor progression and metastasis. Several growth factors with angiogenic activity have been described. These include fibroblast growth factor (FGF), platelet derived growth factor (PDGF), vascular endothelial growth factor (VEGF) and placenta growth factor (PIGF). Like VEGF, several PIGF variants have been shown to arise from alternative mRNA splicings. Evidence has suggested VEGF to be an obligatory component in PIGF signaling. While VEGF homodimers and VEGF/PIGF heterodimers function as potent mediators of mitogenic and chemotactic responses in endothelial cells, PIGF homodimers are effectual only at extremely high concentrations. Indeed, many of the physiological effects attributed to VEGF may actually be a result of VEGF/PIGF. VEGF and PIGF share a common receptor, Flt-1, and may also activate Flk-1/KDR.

## REFERENCES

1. Folkman, J., et al. 1987. Angiogenic factors. *Science* 235: 442-447.
2. Folkman, J., et al. 1989. Induction of angiogenesis during the transition from hyperplasia to neoplasia. *Nature* 339: 58-61.
3. Bouck, N. 1990. Tumor angiogenesis: the role of oncogenes and tumor suppressor genes. *Cancer Cells* 2: 179-185.
4. Ferrara, N., et al. 1991. The vascular endothelial growth factor family of polypeptides. *J. Cell. Biochem.* 47: 211-218.
5. DiSalvo, J., et al. 1995. Purification and characterization of a naturally occurring vascular endothelial growth factor placenta growth factor heterodimer. *J. Biol. Chem.* 270: 7717-7723.

## CHROMOSOMAL LOCATION

Genetic locus: PGF (human) mapping to 14q24.3.

## PRODUCT

PIGF 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 PIGF shRNA Plasmid (h): sc-44027-SH and PIGF shRNA (h) Lentiviral Particles: sc-44027-V as alternate gene silencing products.

For independent verification of PIGF (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-44027A, sc-44027B and sc-44027C.

## 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

PIGF siRNA (h) is recommended for the inhibition of PIGF 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

PIGF (H-4): sc-518003 is recommended as a control antibody for monitoring of PIGF 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).

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor PIGF gene expression knockdown using RT-PCR Primer: PIGF (h)-PR: sc-44027-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. Andersson, M.K., et al. 2010. Nuclear expression of FLT1 and its ligand PGF in FUS-DDIT3 carrying myxoid liposarcomas suggests the existence of an intracrine signaling loop. *BMC Cancer* 10: 249.
2. Tanaka, K., et al. 2018. Tumor necrosis factor- $\alpha$  regulates angiogenesis of BeWo cells via synergy of PIGF/VEGFR1 and VEGF-A/VEGFR2 axes. *Placenta* 74: 20-27.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.