SANTA CRUZ BIOTECHNOLOGY, INC.

PIGF (H-4): sc-518003

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. and Klagsbrun, M. 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.

CHROMOSOMAL LOCATION

Genetic locus: PGF (human) mapping to 14q24.3; Pgf (mouse) mapping to 12 D2.

SOURCE

PIGF (H-4) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 124-149 at the C-terminus of PIGF of human origin.

PRODUCT

Each vial contains 200 µg IgA kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

PIGF (H-4) is recommended for detection of PIGF-1, PIGF-3 and to a lesser extent, PIGF-2 isoforms of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for PIGF siRNA (h): sc-44027, PIGF siRNA (m): sc-39836, PIGF shRNA Plasmid (h): sc-44027-SH, PIGF shRNA Plasmid (m): sc-39836-SH, PIGF shRNA (h) Lentiviral Particles: sc-44027-V and PIGF shRNA (m) Lentiviral Particles: sc-39836-V.

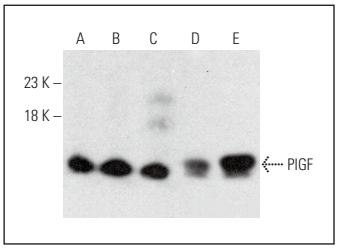
Molecular Weight of PIGF: 18 kDa.

Positive Controls: RAW 264.7 whole cell lysate: sc-2211, WEHI-3 cell lysate: sc-3815 or THP-1 cell lysate: sc-2238.

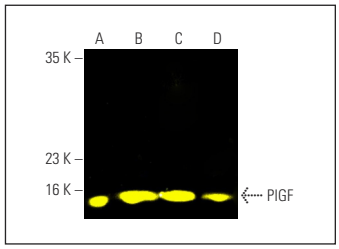
RECOMMENDED SUPPORT REAGENTS

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) Immunoprecipitation: use Protein L-Agarose: sc-2336 (0.5 ml agarose/2.0 ml). 3) 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.

DATA



PIGF (H-4): sc-518003. Western blot analysis of PIGF expression in RAW 264.7 (**A**), JC (**B**) and WEHI-3 (**C**) whole cell lysates and mouse placenta (**D**) and rat placenta (**E**) tissue extracts.



PIGF (H-4): sc-518003. Fluorescent western blot analysis of PIGF expression in RAW 264.7 (**A**), JC (**B**) and THP-1 (**C**) whole cell lysates and mouse placenta tissue extract (**D**). Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgGκ BP-CFL 488: sc-516176.

SELECT PRODUCT CITATIONS

1. Zhao, S., et al. 2019. Placental growth factor gene silencing mitigates the epithelial-to-mesenchymal transition via the p38 MAPK pathway in rats with hyperoxia-induced lung injury. Mol. Med. Rep. 20: 4867-4874.
2. Bhattacharjee, J., et al. 2021. Physical activity differentially regulates VEGF, PIGF, and their receptors in the human placenta. Physiol. Rep. 9: e14710.
3. Kim, Y.H., et al. 2022. Promotion of platelet production by co-transplantation of mesenchymal stem cells in bone marrow transplantation. Tissue Eng. Regen. Med. 19: 131-139.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.