# Human PIGF-4 Antibody

Monoclonal Mouse $IgG_{2B}$ Clone # 1039228

Catalog Number: MAB2644

## DESCRIPTION

| | |
|---|---|
| **Species Reactivity** | Human |
| **Specificity** | Detects human PIGF-4 in direct ELISAs. |
| **Source** | Monoclonal Mouse $IgG_{2B}$ Clone # 1039228 |
| **Purification** | Protein A or G purified from hybridoma culture supernatant |
| **Immunogen** | Human embryonic kidney cell HEK293-derived human PIGF-4<br>Leu19-Arg242<br>Accession # P49763-4 |
| **Formulation** | Lyophilized from a 0.2 μm filtered solution in PBS with Trehalose. See Certificate of Analysis for details.<br>*Small pack size (-SP) is supplied either lyophilized or as a 0.2 μm filtered solution in PBS. |

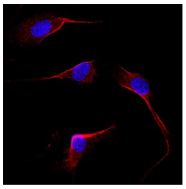
## APPLICATIONS

**Please Note:** *Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.*

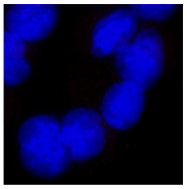
| | Recommended Concentration | Sample |
|---|---|---|
| **Immunocytochemistry** | 8-25 µg/mL | Immersion fixed HUVEC human umbilical vein endothelial cells |

## DATA

**Immunocytochemistry**



Positive (HUVEC cells)



Negative (K562 cells)

**PIGF-4 in HUVEC Human Cells.** PIGF-4 was detected in immersion fixed HUVEC human umbilical vein endothelial cells (positive staining) and K562 human chronic myelogenous leukemia cell line (negative staining) using Mouse Anti-Human PIGF-4 Monoclonal Antibody (Catalog # MAB2644) at 8 µg/mL for 3 hours at room temperature. Cells were stained using the NorthernLights™ 557-conjugated Anti-Mouse IgG Secondary Antibody (red; Catalog # NL007) and counterstained with DAPI (blue). Specific staining was localized to cell membrane and cytoplasm. Staining was performed using our protocol for Fluorescent ICC Staining of Non-adherent Cells.

## PREPARATION AND STORAGE

| | |
|---|---|
| **Reconstitution** | Reconstitute at 0.5 mg/mL in sterile PBS. |
| **Shipping** | The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.<br>*Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C |
| **Stability & Storage** | **Use a manual defrost freezer and avoid repeated freeze-thaw cycles.**<br>• 12 months from date of receipt, -20 to -70 °C as supplied.<br>• 1 month, 2 to 8 °C under sterile conditions after reconstitution.<br>• 6 months, -20 to -70 °C under sterile conditions after reconstitution. |



bio-techne®
Global bio-techne.com info@bio-techne.com techsupport@bio-techne.com TEL +1 612 379 2956
USA TEL 800 343 7475 Canada TEL 855 668 8722 China TEL +86 (21) 52380373
Europe | Middle East | Africa TEL +44 (0)1235 529449

# Human PIGF-4 Antibody

Monoclonal Mouse $IgG_{2B}$ Clone # 1039228

Catalog Number: MAB2644

## BACKGROUND

Placenta growth factor (PIGF or PGF) is an approximately 55-60 kDa member of the PDGF/VEGF family of secreted growth factors that share a conserved pattern of eight cysteines (1). Alternative splicing generates multiple human PIGF isoforms containing 131 (PIGF-1), 152 (PIGF-2), 203 (PIGF-3), or 224 (PIGF-4) amino acids (aa) (2, 3). Mature human PIGF shares 66% and 63% aa sequence identity with comparable regions of mouse and rat PIGF, respectively. PIGF is expressed as a variably glycosylated disulfide linked homodimer by villous trophoblasts and decidual cells, with smaller amounts in erythroblasts, keratinocytes and some endothelial cells (3-6). Circulating PIGF increases during pregnancy, reaching a peak in mid-gestation; this increase is attenuated in preeclampsia (7). Postnatally, mice lacking PIGF show impaired angiogenesis in response to ischemia (8). PIGF binds and signals through VEGF R1/Flt-1 and Neuropilins (some isoforms), but not VEGF R2/Flk-1/KDR (8-10). In contrast, VEGF binds both VEGF R1 and R2, but signals mainly through the angiogenic receptor, VEGF R2. PIGF and VEGF therefore compete for binding to VEGF R1, resulting in a PIGF inhibition of VEGF/VEGF R1 binding coupled to a subsequent promotion of VEGF/VEGF R2-mediated angiogenesis (8, 9). However, PIGF (especially PIGF-1) and some forms of VEGF can form heterodimers that alter the angiogenic effect of VEGF on VEGF R2 (4, 9). PIGF induces monocyte activation, migration, and production of inflammatory cytokines and VEGF (1). These activities facilitate wound and bone fracture healing and also contribute to inflammation in active sickle cell disease and atherosclerosis (1, 5, 6, 8, 11-13).

**References:**

1. Dewerchin, M. and P. Carmeliet (2012) Cold Spring Harb. Perspect. Med. **2**:a011056.
2. Cao, Y. *et al.* (1997) Biochem. Biophys. Res. Commun. **253**:493.
3. Yang, W. *et al.* (2003) J. Reprod. Immunol. **60**:53.
4. Eriksson, A. *et al.* (2002) Cancer Cell **1**:99.
5. Oura, H. *et al.* (2003) Blood **101**:560.
6. Roncal, C. *et al.* (2010) Cardiovasc. Res. **86**:29.
7. Levine, R.J. *et al.* (2004) N. Engl. J. Med. **350**:672.
8. Carmeliet, P. *et al.* (2001) Nat. Med. **7**:575.
9. Autiero, M. *et al.* (2003) Nat. Med. **9**:936.
10. Migdal, M. *et al.* (1998) J. Biol. Chem. **273**:22272.
11. Perelman, N. *et al.* (2003) Blood **102**:1506.
12. Cianfarani, F. *et al.* (2006) Am. J. Pathol. **169**:1167.
13. Maes, C. *et al.* (2006) J. Clin. Invest. **116**:1230.



bio-techne®
**Global** bio-techne.com info@bio-techne.com techsupport@bio-techne.com TEL +1 612 379 2956
**USA** TEL 800 343 7475 **Canada** TEL 855 668 8722 **China** TEL +86 (21) 52380373
**Europe | Middle East | Africa** TEL +44 (0)1235 529449