

LEAF™ Purified anti-human PDGF-AA Antibody

Catalog# / Size	535503 / 100 µg
Clone	Poly5355
Regulatory Status	RUO
Other Names	Platelet-Derived Growth Factor-AA, Glioma-derived growth factor, GDGF, Osteosarcoma-derived Growth Factor, ODGF
Isotype	Goat Polyclonal IgG
Description	Platelet-derived growth factors (PDGFs) are homo- or heterodimers of four polypeptides, known as A, B, C and D chains. PDGFs usually act primarily in paracrine manner and may be engaged in autocrine loops in tumors. Five PDGF isoforms (AA, BB, AB, CC and DD) have been identified. PDGFs are primarily synthesized, stored, and released by platelets upon activation. PDGF-A and PDGF-B undergo intracellular activation during transport in the exocytic pathway and PDGF-C and PDGF-B are activated by extracellular proteases. Like PDGF-B, intracellular activation of PDGF-A, by removing the N-terminal sequence, is required for PDGF-A to bind to its receptor. PDGF-A can also be expressed by epithelial cells, smooth muscle cells, and neuronal progenitors. PDGF-AA is well known as a potent mitogen for the proliferation of oligodendrocyte progenitor cells (OPCs). PDGF-AA can promote embryonic forebrain neural stem cells into O4-positive oligodendrocytes by activating Erk pathway. PDGF-AA also plays an important role in directing cell migration during embryonic development and postnatal migration response including wound healing. Chemotaxis ability of PDGF-AA has been shown on fibroblasts, smooth muscle cells, monocytes, and granulocytes.

Product Details

Verified Reactivity	Human
Antibody Type	Polyclonal
Host Species	Goat
Immunogen	Recombinant human PDGF-AA
Formulation	0.2 µm filtered in phosphate-buffered solution, pH 7.2, containing no preservative. Endotoxin level is < 0.1 EU/µg of the protein (< 0.01 ng/µg of the protein) as determined by the LAL test.
Preparation	The LEAF™ (Low Endotoxin, Azide-Free) antibody was purified by affinity chromatography.
Concentration	The antibody is bottled at the concentration indicated on the vial. To obtain lot-specific concentration, please enter the lot number in our Concentration and Expiration Lookup or Certificate of Analysis online tools.
Storage & Handling	Upon receipt, store frozen at -20°C. Make small volume aliquots if needed and avoid repeated freeze-thaw cycles to prevent denaturing the antibody.
Application	Neut - Quality tested IHC-P, WB - Verified
Recommended Usage	Each lot of this antibody is quality control tested by neutralization of NIH 3T3 cell proliferation induced by recombinant human PDGF-AA (Cat. No. 773702) at 300 ng/mL. The ND ₅₀ is 2 – 10 µg/mL. For immunohistochemistry on formalin-fixed paraffin-embedded tissue sections, a concentration range of 5.0 - 10.0 µg/mL is suggested. For western blotting, the suggested use of this reagent is 0.2 - 1.0 µg/mL. It is recommended that the reagent be titrated for optimal performance for each application.
RRID	AB_2910467 (BioLegend Cat. No. 535503)

Antigen Details

Structure	Homodimer
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Distribution	Platelets produce PDGF-AA. Other cells, including epithelial cells, smooth muscle cells, and neuronal progenitors, can also produce PDGF-AA.
Function	PDGF-A has two isoforms due to alternative splicing which is cell type-specific and is different among organs and tumor cell lines. Expression of PDGF-A can be increased in human uterine smooth muscle cells during the physiological hypertrophy. Expression of PDGF-A can be repressed by glucocorticoid treatment of smooth muscle cells and aging of human fibroblasts.
Interaction	Smooth muscle cells, connective tissue cells, bone and cartilage cells, and oligodendrocyte cells
Ligand/Receptor	PDGFR- α
Cell Type	Hematopoietic stem and progenitors, Mesenchymal Stem Cells, Neural Stem Cells
Biology Area	Angiogenesis, Cell Biology, Immunology, Neuroscience, Neuroscience Cell Markers, Stem Cells
Molecular Family	Cytokines/Chemokines, Growth Factors
Antigen References	<ol style="list-style-type: none"> 1. Heldin CH and Westermark B. 1999. <i>Physiol Rev.</i> 79:1283-316. 2. Fredriksson L, <i>et al.</i> 2004. <i>Cytokine Growth Factor Rev.</i> 15:197-204. 3. Hu JG, <i>et al.</i> 2012. <i>J Mol Neurosci.</i> 46:644-53. 4. Schneider L, <i>et al.</i> 2010. <i>Cell Physiol Biochem.</i> 25:279-92. 5. Karlsson C and Paulsson Y. 1994. <i>J Cell Physiol.</i> 158:256-62. 6. Shure D, <i>et al.</i> 1992. <i>Biochem Biophys Res Commun.</i> 186:1510-4.
Gene ID	5154

Related Protocols

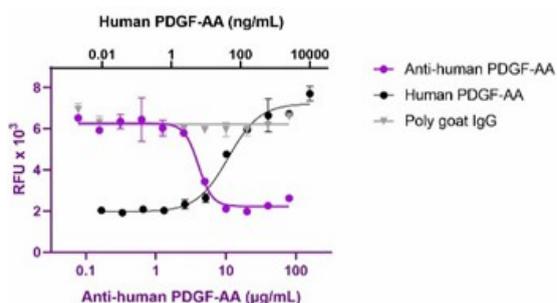
[Western Blotting Protocol](#)

[Immunohistochemistry Protocol for Paraffin-Embedded Sections](#)

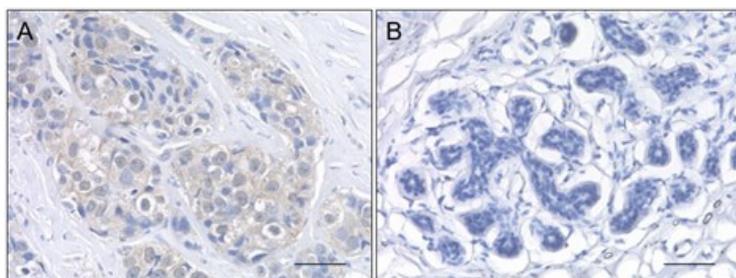
Other Formats

LEAF™ Purified anti-human PDGF-AA

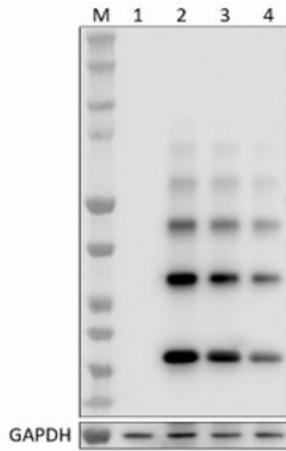
Product Data



Anti-human PDGF-AA inhibits NIH 3T3 cell proliferation induced by 300 ng/mL recombinant human PDGF-AA (Cat. No. 773702). The ND₅₀ for this effect is 2-10 µg/mL.



IHC staining of purified anti-human PDGF-AA (clone Poly5355) on formalin-fixed paraffin-embedded human breast cancer (A, positive control) and breast (B, negative control) tissues. Following antigen retrieval using Sodium Citrate H.I.E.R. (Cat. No. 928502), the tissues were incubated with 5 µg/mL of purified anti-human PDGF-AA overnight at 4°C. BioLegend's Ultra Streptavidin HRP Kit (Multi-Species, DAB) (Cat. No. 929501) and HRP anti-goat antibody were used for detection followed by hematoxylin counterstaining, according to the protocol provided. The images were captured with a 40X objective. Scale bar: 50 µm



Total cell lysates (15 μ g total protein) from Jurkat (negative control, Lane 1) and Jurkat lysate spiked with various amounts of recombinant human PDGF-AA protein (Cat. No. 773702) at 100 ng (positive control, Lane 2), 50 ng (positive control, Lane 3), and 10 ng (positive control, Lane 4) were resolved by 4-12 % Bis-Tris gel electrophoresis, transferred to a PVDF membrane, and probed with 1 μ g/mL of purified anti-human PDGF-AA overnight at 4°C. Proteins were visualized by chemiluminescence detection using HRP anti-goat IgG. Direct-Blot™ HRP anti-GAPDH (Cat. No. 607904) was used as a loading control at a 1:50000 dilution (lower). Lane M: Molecular weight ladder

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