Mouse PDGF Rα Antibody

Antigen Affinity-purified Polyclonal Goat IgG
Catalog Number: AF1062

DESCRIPTION

Species Reactivity	Mouse
Specificity	Detects mouse PDGF Rα in direct ELISAs and Western blots. In direct ELISAs, less than 1% cross-reactivity with recombinant human (rh) PDGF Rα, rhPDGF Rβ, and recombinant mouse PDGF Rβ is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	Mouse myeloma cell line NS0-derived recombinant mouse PDGF Rα Leu25-Glu524 (Asp65Glu, Gly439Ala, Thr440Ala) Accession # P26618
Endotoxin Level	<0.10 EU per 1 µg of the antibody by the LAL method.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied either lyophilized or as a 0.2 µm filtered solution in PBS.

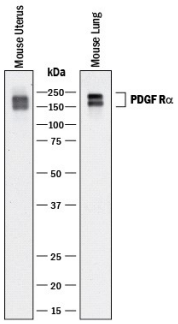
APPLICATIONS

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
Western Blot	1 µg/mL	See Below
Immunohistochemistry	5-15 µg/mL	See Below
Neutralization	Measured by its ability to neutralize PDGF-AA-induced proliferation in the NR6R-3T3 mouse fibroblast cell line. The Neutralization Dose (ND_{50}) is typically 1-5 µg/mL in the presence of 10 ng/mL Recombinant Human PDGF-AA.	

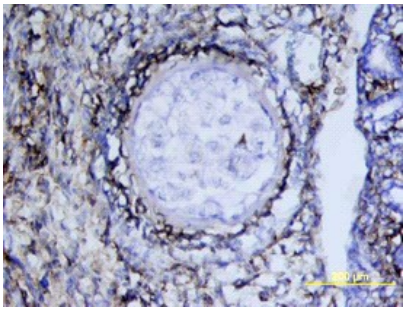
DATA

Western Blot



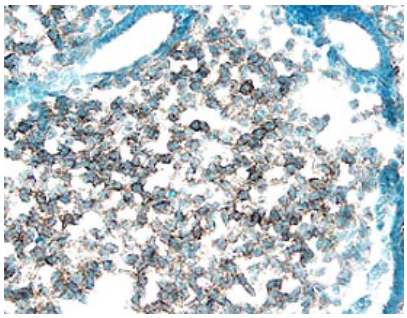
Detection of Mouse PDGF Rα by Western Blot. Western blot shows lysates of mouse uterus tissue and mouse lung tissue. PVDF membrane was probed with 1 µg/mL of Goat Anti-Mouse PDGF Rα Antigen Affinity-purified Polyclonal Antibody (Catalog # AF1062) followed by HRP-conjugated Anti-Goat IgG Secondary Antibody (Catalog # HAF017). Specific bands were detected for PDGF Rα at approximately 160-200 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.

Immunohistochemistry



PDGF Rα in Mouse Embryo. PDGF Rα was detected in immersion fixed frozen sections of mouse embryo using Goat Anti-Mouse PDGF Rα Antigen Affinity-purified Polyclonal Antibody (Catalog # AF1062) at 15 µg/mL overnight at 4 °C. Tissue was stained using the Anti-Goat HRP-DAB Cell & Tissue Staining Kit (brown; Catalog # CTS008) and counterstained with hematoxylin (blue). View our protocol for Chromogenic IHC Staining of Frozen Tissue Sections.

Immunohistochemistry



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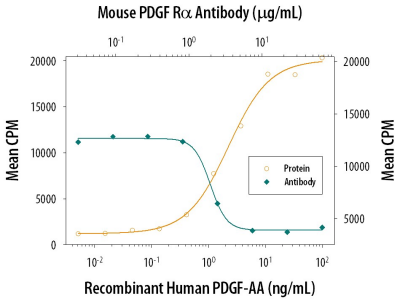
Neutralization



Cell Proliferation Induced by PDGF-AA and Neutralization by Mouse PDGF Rα Antibody. Recombinant Human PDGF-AA (Catalog # 221-AA) stimulates proliferation in the NR6R-3T3 mouse fibroblast cell line in a dose-dependent manner (orange line). Proliferation elicited by Recombinant Human PDGF-AA (10 ng/mL) is neutralized (green line) by increasing concentrations of Goat Anti-Mouse PDGF Rα Antigen Affinity-purified Polyclonal Antibody (Catalog # AF1062). The ND_{50} is typically 1-5 µg/mL.

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PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.2 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *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.** ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 6 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

The platelet-derived growth factor (PDGF) family consists of proteins derived from four genes (PDGF-A, -B, -C, and -D) that form disulfide-linked homodimers (PDGF-AA, -BB, -CC, and -DD) and a heterodimer (PDGF-AB) (1, 2). These proteins regulate diverse cellular functions by binding to and inducing the homo- or hetero-dimerization of two receptors (PDGF Rα and Rβ). Whereas α/α homo-dimerization is induced by PDGF-AA, -BB, -CC, and -AB, α/β hetero-dimerization is induced by PDGF-AB, -BB, -CC, and -DD, and β/β homo-dimerization is induced only by PDGF-BB and -DD (1-4). Both PDGF Rα and Rβ are members of the class III subfamily of receptor tyrosine kinases (RTK) that also includes the receptors for M-CSF, SCF, and Flt-3 ligand. All class III RTKs are characterized by the presence of five immunoglobulin-like domains in their extracellular region and a split kinase domain in their intracellular region. Ligand-induced receptor dimerization results in autophosphorylation in trans resulting in the activation of several intracellular signaling pathways that can lead to cell proliferation, cell survival, cytoskeletal rearrangement, and cell migration. Many cell types, including fibroblasts and smooth muscle cells, express both the α and β receptors. Others have only the α receptors (oligodendrocyte progenitor cells, mesothelial cells, liver sinusoidal endothelial cells, astrocytes, platelets, and megakaryocytes) or only the β receptors (myoblasts, capillary endothelial cells, pericytes, T cells, myeloid hematopoietic cells, and macrophages) (1, 2). Recombinant mouse and human soluble PDGF Rβ bind PDGF with high affinity and are potent PDGF antagonists.

References:

1. Betsholtz, C. *et al.* (2001) BioEssays **23**:494.
2. Ostman, A. and A.H. Heldin (2001) Advances in Cancer Research **80**:1.
3. Gilbertson, D. *et al.* (2001) J. Biol. Chem. **276**:27406.
4. LaRochells, W.J. *et al.* (2001) Nature Cell Biol. **3**:517.

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