Human PDGF Rα Antibody

Antigen Affinity-purified Polyclonal Goat IgG
Catalog Number: AF-307-NA

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human PDGF Rα in direct ELISAs and Western blots. In direct ELISAs, less than 2% cross-reactivity with recombinant mouse PDGF Rα, recombinant human (rh) PDGF Rβ, rhFGF R2, and rhFGF R3 is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	*S. frugiperda* insect ovarian cell line *Sf* 21-derived recombinant human PDGF Rα Gln24-Glu524 Accession # P16234
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 as a 0.2 µm filtered solution in PBS.

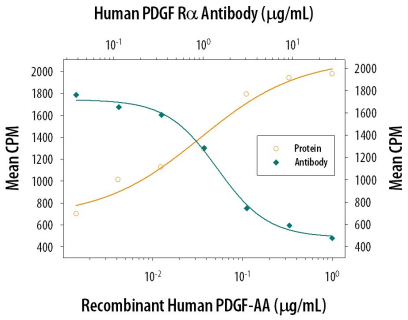
APPLICATIONS

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	0.1 µg/mL	Recombinant Human PDGF Rα (Catalog # 322-PR)
Immunohistochemistry	5-15 µg/mL	See Below
Neutralization	Measured by its ability to neutralize PDGF-AA-induced proliferation in the WS-1 human fetal skin fibroblast cell line. The Neutralization Dose (ND_{50}) is typically 1-6 µg/mL in the presence of 10 ng/mL Recombinant Human PDGF-AA.	

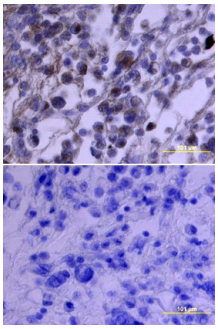
DATA

Neutralization



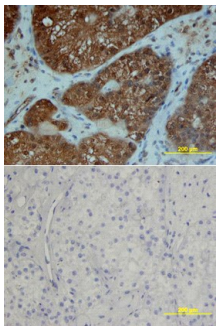
Cell Proliferation Induced by PDGF-AA and Neutralization by Human PDGF Rα Antibody.
Recombinant Human PDGF-AA (Catalog # 221-AA) stimulates proliferation in the WS-1 human fetal skin fibroblast cell line in a dose-dependent manner (orange line). Proliferation elicited by Recombinant Human PDGF-AA (10 ng/mL) is neutralized (green line) by increasing concentrations of Goat Anti-Human PDGF Rα Antigen Affinity-purified Polyclonal Antibody (Catalog # AF-307-NA). The ND_{50} is typically 1-6 µg/mL.

Immunohistochemistry



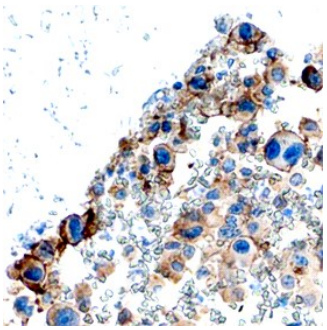
PDGF Rα in Human Breast Cancer Tissue.
PDGF Rα was detected in immersion fixed paraffin-embedded sections of human breast cancer tissue using Goat Anti-Human PDGF Rα Antigen Affinity-purified Polyclonal Antibody (Catalog # AF-307-NA) at 15 µg/mL overnight at 4 °C. Tissue was stained using the Anti-Goat HRP-DAB Cell & Tissue Staining Kit (brown; Catalog # CTS008) and counterstained with hematoxylin (blue). Lower panel shows a lack of labeling if primary antibodies are omitted and tissue is stained only with secondary antibody followed by incubation with detection reagents. View our protocol for Chromogenic IHC Staining of Paraffin-embedded Tissue Sections.

Immunohistochemistry



PDGF Rα in Human Ovary.
PDGF Rα was detected in immersion fixed paraffin-embedded sections of human ovarian array using Goat Anti-Human PDGF Rα Antigen Affinity-purified Polyclonal Antibody (Catalog # AF-307-NA) 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 Paraffin-embedded Tissue Sections.

Immunohistochemistry



PDGF Rα in Human Osteosarcoma.
PDGF Rα was detected in immersion fixed paraffin-embedded sections of human osteosarcoma using Goat Anti-Human PDGF Rα Antigen Affinity-purified Polyclonal Antibody (Catalog # AF-307-NA) at 3 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). Specific staining was localized to plasma membranes. View our protocol for Chromogenic IHC Staining of Paraffin-embedded Tissue Sections.

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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

PDGF is a major serum mitogen that can exist as a homo- or heterodimeric protein consisting of disulfide-linked PDGF-A and PDGF-B chains. The PDGF-AA, PDGF–BB, and PDGF-AB isoforms have been shown to bind to two distinct cell surface PDGF receptors with different affinities. Whereas PDGF Rα binds all three PDGF isoforms with high affinity, PDGF Rβ binds PDGF-BB and -AB, but not PDGF-AA. Both PDGF Rα and PDGF 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. PDGF binding induces receptor homo-and heterodimerization and signal transduction. The expression of the α and β receptors is independently regulated in various cell types. Only PDGF Rα is expressed in oligodendrocyte progenitor cells, mesothelial cell, and liver endothelial cells. Soluble PDGF Rα has been detected in cell conditioned medium and human plasma. Recombinant soluble PDGF Rα binds PDGF with high affinity and is a potent PDGF antagonist (1).

References:

1. Heldin, C.H. and L. Claesson-Welsh (1994) *Guidebook to Cytokines and Their Receptors*, Nicola, N.A. (ed) Oxford University Press, New York, NY p. 202.

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