Rat PDGF-AA Antibody

Antigen Affinity-purified Polyclonal Goat IgG
Catalog Number: AF1055

DESCRIPTION

Species Reactivity	Rat
Specificity	Detects rat PDGF-AA in direct ELISAs and Western blots. In direct ELISAs, approximately 50% cross-reactivity with recombinant rat (rr) PDGF-AB is observed, 30% cross-reactivity with recombinant human PDGF-AA is observed, and less than 5% cross-reactivity with rrPDGF-BB is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	*E. coli*-derived recombinant rat PDGF-AA Ser87-Arg196 Accession # AAB59693
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.

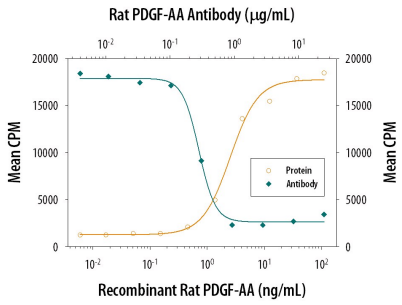
APPLICATIONS

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 Rat PDGF-AA (Catalog # 1055-AA)
Immunohistochemistry	5-15 µg/mL	Perfusion fixed frozen sections of rat intestine and thymus
Neutralization	Measured by its ability to neutralize PDGF-AA-induced proliferation in the NR6R-3T3 mouse fibroblast cell line. Raines, E. W. *et al.* (1985) Methods Enzymol. **109**:749. The Neutralization Dose (ND_{50}) is typically 0.2-0.6 µg/mL in the presence of 25 ng/mL Recombinant Rat PDGF-AA.	

DATA

Neutralization



Cell Proliferation Induced by PDGF-AA and Neutralization by Rat PDGF-AA Antibody. Recombinant Rat PDGF-AA (Catalog # 1055-AA) stimulates proliferation in the NR6R-3T3 mouse fibroblast cell line in a dose-dependent manner (orange line). Proliferation elicited by Recombinant Rat PDGF-AA (25 ng/mL) is neutralized (green line) by increasing concentrations of Goat Anti-Rat PDGF-AA Antigen Affinity-purified Polyclonal Antibody (Catalog # AF1055). The ND_{50} is typically 0.2-0.6 µg/mL.

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.
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.

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BACKGROUND

The platelet-derived growth factor (PDGF) family consists of proteins derived from four genes (PDGF-A, -B, -C, and -D) that form four disulfide-linked homodimers (PDGF-AA, -BB, -CC, and -DD) and one 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 have 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, cell migration and extracellular matrix production. Rat PDGF-A chain cDNA encodes a 204 amino acid (aa) residue precursor protein with a 20 aa signal peptide, a 65 aa propeptide that is removed by proteolysis, and a 119 aa mature protein. By alternative splicing, a short form lacking 8 C-terminal aa residues also exists. The long form contains the 8 aa basic insert which promotes intracellular cell retention and association with cell matrix. PDGF-A is expressed in multiple cell types and tissues. Based on PDGF-A knockout studies, PDGF-A appears to be important for the development of oligodendrocytes, testicular Leydig cells, alveolar smooth muscle cells, hair follicles and intestinal villus (1).

References:

1. Betshotz, 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.