

**DESCRIPTION**

<b>Source</b>	Mouse myeloma cell line, NS0-derived rat PDGF R beta protein Leu32-Lys530, with a C-terminal 6-His tag Accession # Q05030.2
<b>N-terminal Sequence Analysis</b>	Leu32
<b>Predicted Molecular Mass</b>	57 kDa

**SPECIFICATIONS**

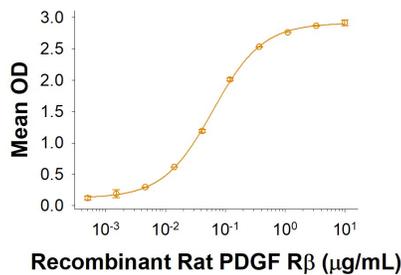
<b>SDS-PAGE</b>	88-102 kDa, under reducing conditions
<b>Activity</b>	Measured by its binding ability in a functional ELISA. When Recombinant Rat PDGF-BB (Catalog # 520-BB/CF) is coated at 2 $\mu$ g/mL (100 $\mu$ L/well), Recombinant Rat PDGF R $\beta$ His-tag binds with an ED <sub>50</sub> of 0.04-0.2 $\mu$ g/mL.
<b>Endotoxin Level</b>	<0.10 EU per 1 $\mu$ g of the protein by the LAL method.
<b>Purity</b>	>95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
<b>Formulation</b>	Lyophilized from a 0.2 $\mu$ m filtered solution in PBS. See Certificate of Analysis for details.

**PREPARATION AND STORAGE**

<b>Reconstitution</b>	Reconstitute at 500 $\mu$ g/mL in PBS.
<b>Shipping</b>	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
<b>Stability &amp; Storage</b>	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. <ul style="list-style-type: none"> <li>• 12 months from date of receipt, -20 to -70 °C as supplied.</li> <li>• 1 month, 2 to 8 °C under sterile conditions after reconstitution.</li> <li>• 3 months, -20 to -70 °C under sterile conditions after reconstitution.</li> </ul>

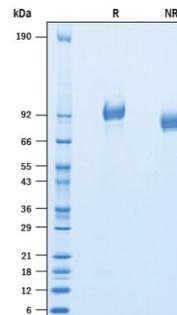
**DATA**

**Binding Activity**



When Recombinant Rat PDGF-BB (Catalog # 520-BB/CF) is coated at 2  $\mu$ g/mL (100  $\mu$ L/well), Recombinant Rat PDGF R beta His-tag binds with an ED<sub>50</sub> of 0.04-0.2  $\mu$ g/mL.

**SDS-PAGE**



2  $\mu$ g/lane of Recombinant Rat PDGF R beta His-tag (Catalog # 10616-PR) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 88-102 kDa.

**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 heterodimerization of two receptors (PDGF R $\alpha$  and R $\beta$ ). Whereas  $\alpha/\alpha$  homo-dimerization is induced by PDGF-AA, -BB, -CC, and -AB,  $\alpha/\beta$  hetero-dimerization is induced by PDGF-AB, -BB, -CC, and -DD, and  $\beta/\beta$  homo-dimerization is induced only by PDGF-BB, and -DD (1-4). Both PDGF R $\alpha$  and R $\beta$  are ~123 kDa members of the class III subfamily of receptor tyrosine kinases (RTK) that also includes the receptors for M-CSF, SCF and Flt3-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. The extracellular domain of rat PDGF R $\beta$  contains 4 disulfide bonds and shares a 79.2% and 96.6% sequence identity with human and mouse PDGF R $\beta$ , respectively. 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  $\alpha$  and  $\beta$  receptors. PDGF R $\alpha$  is also expressed on the Golgi Apparatus and PDGF R $\beta$  is expressed on lysosomes. Others have only the  $\alpha$  receptors (oligodendrocyte progenitor cells, mesothelial cells, liver sinusoidal endothelial cells, astrocytes, platelets and megakaryocytes) or only the  $\beta$  receptors (myoblasts, capillary endothelial cells, pericytes, T cells, myeloid hematopoietic cells and macrophages). Soluble PDGF R $\alpha$  has been detected in normal human plasma and serum as well as in the conditioned medium of the human osteosarcoma cell line MG-63 (5). Both the recombinant mouse and human soluble PDGF R $\alpha$  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.
5. Tiesman, J. and C.E. Hart (1993) *J. Biol. Chem.* **5**:9621.