

# PRODUCT INFORMATION



## PDGFR $\beta$ /CD140b Extracellular Domain (human, recombinant)

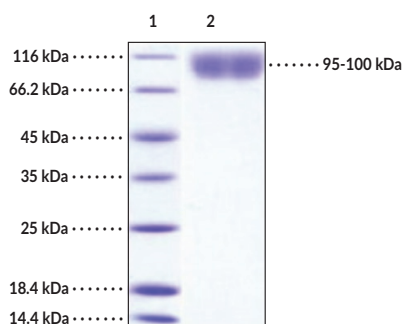
Item No. 33986

### Overview and Properties

<b>Synonyms:</b>	CD140 Antigen-like Family Member B, PDGFR-1, Platelet-derived Growth Factor Receptor 1, Platelet-derived Growth Factor Receptor $\beta$
<b>Source:</b>	Active recombinant human C-terminal His-tagged PDGFR $\beta$ expressed in HEK293 cells
<b>Amino Acids:</b>	33-531
<b>Uniprot No.:</b>	P09619
<b>Molecular Weight:</b>	57.6 kDa
<b>Storage:</b>	-80°C (as supplied)
<b>Stability:</b>	$\geq 1$ year
<b>Purity:</b>	$\geq 90\%$ estimated by SDS-PAGE
<b>Supplied in:</b>	Lyophilized from sterile PBS, pH 7.4
<b>Endotoxin Testing:</b>	$< 1.0$ EU/ $\mu$ g, determined by the LAL endotoxin assay
<b>Bioactivity:</b>	See figures for details

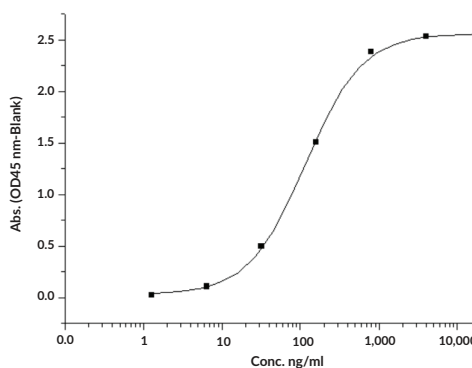
Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Images



Lane 1: MW Markers  
Lane 2: PDGFR $\beta$ /CD140b Extracellular Domain

**SDS-PAGE Analysis of PDGFR $\beta$ /CD140b Extracellular Domain.**  
This protein has a calculated molecular weight of 57.6 kDa. It has an apparent molecular weight of approximately 95-100 kDa by SDS-PAGE under reducing conditions due to glycosylation.



Measured by its binding ability in a functional ELISA. Immobilized PDGFR $\beta$ /CD140b Extracellular Domain at 10  $\mu$ g/ml (100  $\mu$ l/well) can bind cynomolgus monkey PDGFB. The EC<sub>50</sub> value of cynomolgus PDGFB is 3-8 ng/ml.

**WARNING**  
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

**SAFETY DATA**  
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

**WARRANTY AND LIMITATION OF REMEDY**  
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**CAYMAN CHEMICAL**  
1180 EAST ELLSWORTH RD  
ANN ARBOR, MI 48108 · USA  
PHONE: [800] 364-9897  
[734] 971-3335  
FAX: [734] 971-3640  
CUSTSERV@CAYMANCHEM.COM  
WWW.CAYMANCHEM.COM

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## Description

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PDGFR $\beta$ , also known as CD140b, is a type I transmembrane glycoprotein and receptor tyrosine kinase encoded by *PDGFRB* in humans.<sup>1</sup> It is composed of five extracellular immunoglobulin-like (Ig-like) domains, a transmembrane domain, and an intracellular kinase domain. PDGFR $\beta$  is ubiquitously expressed and functions as a homodimer or a heterodimer with PDGFR $\alpha$ . Binding of the growth factor PDGF-BB or PDGF-DD to PDGFR $\beta$  promotes homodimerization, induces receptor autophosphorylation and a conformational change that facilitates access to the intracellular kinase domain, and intracellular signaling through multiple pathways, including ERK/MAPK, PI3K/AKT/mTOR, PLC/PKC, and JAK/STAT.<sup>1-3</sup> Knockdown of *Pdgfrb* decreases the number of vascular smooth muscle cells, induces CNS-specific reduction in pericytes, and is postnatally lethal in mice. *De novo* mutations in *PDGFRB* have been found in patients with novel overgrowth syndrome.<sup>4</sup> Cayman's PDGFR $\beta$ /CD140b Extracellular Domain (human, recombinant) protein can be used for binding assays. This protein consists of 510 amino acids, has a calculated molecular weight of 57.6 kDa, and a predicted N-terminus of Leu33 after signal peptide cleavage. By SDS-PAGE, under reducing conditions, the apparent molecular mass of the protein is approximately 95 to 100 kDa due to glycosylation.

## References

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1. Heldin, C.-H. and Lennartsson, J. Structural and functional properties of platelet-derived growth factor and stem cell factor receptors. *Cold Spring Harb. Perspect. Biol.* **5(8)**, a009100 (2013).
2. Kelly, J.D., Haldeman, B.A., Grant, F.J., *et al.* Platelet-derived growth factor (PDGF) stimulates PDGF receptor subunit dimerization and intersubunit *trans*-phosphorylation. *J. Biol. Chem.* **266(14)**, 8987-8992 (1991).
3. Olson, L.E. and Soriano, P. PDGFR $\beta$  signaling regulates mural cell plasticity and inhibits fat development. *Dev. Cell* **20(6)**, 815-826 (2011).
4. Takenouchi, T., Yamaguchi, Y., Tanikawa, A., *et al.* Novel overgrowth syndrome phenotype due to recurrent *de novo* *PDGFRB* mutation. *J. Pediatr.* **166(2)**, 483-486 (2015).

CAYMAN CHEMICAL  
1180 EAST ELLSWORTH RD  
ANN ARBOR, MI 48108 · USA  
PHONE: [800] 364-9897  
[734] 971-3335  
FAX: [734] 971-3640  
CUSTSERV@CAYMANCHEM.COM  
WWW.CAYMANCHEM.COM