

# PRODUCT INFORMATION



## PDGFR $\alpha$ /CD140a (human, recombinant)

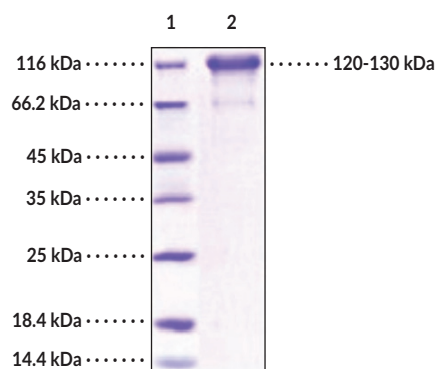
Item No. 31843

### Overview and Properties

<b>Synonyms:</b>	PDGFR2, Platelet-derived Growth Factor Receptor 2, Platelet-derived Growth Factor Receptor $\alpha$ , RHEPDGFRA
<b>Source:</b>	Active recombinant C-terminal human IgG1 Fc-tagged PDGFRA expressed in HEK293 cells
<b>Amino Acids:</b>	24-524
<b>Uniprot No.:</b>	P16234
<b>Molecular Weight:</b>	82.9 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>Protein Concentration:</b>	<i>batch specific</i> mg/ml

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

### Image



Lane 1: MW Markers  
Lane 2: PDGFR $\alpha$ /CD140a

**SDS-PAGE Analysis of PDGFR $\alpha$ /CD140a.** This protein has a calculated molecular weight of 82.9 kDa. It has an apparent molecular weight of approximately 120-130 kDa by SDS-PAGE under reducing conditions due to glycosylation.

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  
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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## Description

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PDGFR $\alpha$ , also known as CD140a, is a type I transmembrane glycoprotein and receptor tyrosine kinase.<sup>1,2</sup> It is composed of five extracellular immunoglobulin-like (Ig-like) domains, a transmembrane domain, and an intracellular kinase domain. PDGFR $\alpha$  is widely expressed and functions as a homodimer or a heterodimer with PDGFR $\beta$ .<sup>1</sup> Binding of the growth factor PDGF-AA or PDGF-CC induces homodimerization, while binding of PDGF-BB or PDGF-AB can induce either homodimerization or heterodimerization with PDGFR $\beta$ .<sup>2</sup> In each case, binding of the ligands 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>1,2</sup> Activating point mutations in *PDGFRA*, the gene encoding PDGFR $\alpha$ , are associated with gastrointestinal stromal tumors.<sup>1</sup> PDGFR $\alpha$  can also fuse with FIP1L1, and the fusion protein has been found in patients with idiopathic hypereosinophilia. Cayman's PDGFR $\alpha$ /CD140a (human, recombinant) protein can be used for binding activity assays. This protein is a disulfide-linked homodimer. The reduced monomer, composed of PDGFR $\alpha$  (amino acids 24-524) fused to human IgG1 Fc at its C-terminus, consists of 739 amino acids and has a calculated molecular weight of 82.9 kDa. As a result of glycosylation, the monomer migrates at approximately 120-130 kDa by SDS-PAGE under reducing conditions.

## References

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1. Roskoski, R., Jr. The role of small molecule platelet-derived growth factor receptor (PDGFR) inhibitors in the treatment of neoplastic disorders. *Pharmacol. Res.* **129**, 65-83 (2018).
2. 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).

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