

PDGFRA Protein, Human, Recombinant (His)

General Information

Synonyms:	PDGFR-2;CD140A;RHEPDGFRA;platelet-derived growth factor receptor, α polypeptide; PDGFR2;platelet-derived growth factor receptor, alpha polypeptide
Protein Construction:	A DNA sequence encoding the extracellular domain (Met 1-Glu 524) of human PDGFR α (NP_006197.1) was fused with a polyhistidine tag at the C-terminus. Predicted N terminal: Gln 24
Species:	Human
Expression Host:	HEK293 Cells
Accession:	P16234-1
Molecular Weight:	57.7 kDa (predicted); 70-80 kDa (reducing condition, due to glycosylation)

QC Testing

Biological Activity:	Measured by its ability to bind human PDGFC-Fc in functional ELISA.
Purity:	$\geq 97\%$ as determined by SDS-PAGE. $\geq 95\%$ as determined by SEC-HPLC.
Endotoxin:	< 1.0 EU/ μ g of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 μ m filter, containing PBS, pH 7.4. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:	Reconstituted with sterile deionized water to 0.25 mg/mL. Reconstitution conditions may vary depending on the lot.
Stability & Storage:	It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C . For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots. <small>Actual storage temperature shall be subject to the COA.</small>

Shipping:	In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.
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Protein Background

PDGFRA, also known as CD140a, together with the structurally homolog protein PDGFRB (CD140b), are cell surface receptors for members of the platelet-derived growth factor family. They are members of the class III subfamily of receptor tyrosine kinase (RTKs) with the similar structure characteristics of five immunoglobulin-like domains in their extracellular region and a split kinase domain in their intracellular region. PDGFRA is expressed in

oligodendrocyte progenitor cells and mesothelial cell, and binds all three ligand isoforms PDGF-AA, PDGF-BB and PDGF-AB with high affinity, whereas PDGFRB does not bind PDGF-AA. PDGFRA plays an essential role in regulating proliferation, chemotaxis and migration of mesangial cells. Recent studies have indicated that PDGFRA acts as a critical mediator of signaling in testis organogenesis and Leydig cell differentiation, and in addition, particularly important for kidney development. Additionally, PDGFRA is involved in tumor angiogenesis and maintenance of the tumor microenvironment and has been implicated in development and metastasis of Hepatocellular carcinoma (HCC). PDGFRA may represent a potential therapeutic target in thymic tumours. PDGFRA gene amplification rather than gene mutation may be the underlying genetic mechanism driving PDGFRA overexpression in a portion of gliomas. Cancer Immunotherapy/Immune Checkpoint Immunotherapy/Targeted Therapy

Reference

Oseini AM, et al. (2009) PDGFRalpha: a new therapeutic target in the treatment of hepatocellular carcinoma? *Expert Opin Ther Targets*. 13(4): 443-54.

Meister M, et al. (2009) Expression and mutational status of PDGFR in thymic tumours. *Anticancer Res*. 29(10): 4057-61.

Martinho O, et al. (2009) Expression, mutation and copy number analysis of platelet-derived growth factor receptor A (PDGFRA) and its ligand PDGFA in gliomas. *Br J Cancer*. 101(6): 973-82.

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