

PDGFRA Protein, Human, Recombinant (His & Avi), Biotinylated

General Information

Synonyms:	platelet-derived growth factor receptor, α polypeptide;RHEPDGFRA;CD140A;platelet-derived growth factor receptor, alpha polypeptide;PDGFR-2;PDGFR2
Protein Construction:	A DNA sequence encoding the human PDGFRA (NP_001334758.1) (Met1-Glu524) was expressed with a c-terminal polyhistidine tagged AVI tag at the C-terminus. The expressed protein was biotinylated in vivo by the Biotin-Protein ligase (BirA enzyme) which is co-expressed. Predicted N terminal: Gln 24
Species:	Human
Expression Host:	HEK293 Cells
Accession:	P16234-1
Molecular Weight:	59.4 kDa (predicted)

QC Testing

Biological Activity:	Immobilized Human PDGF-B Protein (His Tag) at 2 μ g/mL (100 μ L/well) can bind Human PDGFRA Protein (ECD, His & AVI Tag), Biotinylated, the EC ₅₀ is 400-1800 ng/mL.
Purity:	> 95 % as determined by SDS-PAGE.
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:
A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

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.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

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 dose 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 ImmunotherapyImmune CheckpointImmunotherapyTargeted 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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