

PDGF R alpha Protein, Mouse (HEK293, Fc)

Cat. No.:	HY-P74645
Synonyms:	Platelet-derived growth factor receptor alpha; PDGFR-alpha; PDGFR-2; CD140a; PDGFRA
Species:	Mouse
Source:	HEK293
Accession:	P26618 (M1-A528)
Gene ID:	18595
Molecular Weight:	Approximately 83.15 kDa

PROPERTIES

Biological Activity	The enzyme activity of this recombinant protein is testing in progress, we cannot offer a guarantee yet.
Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.2 µm filtered solution of PBS, pH 7.4. Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween 80 are added as protectants before lyophilization.
Endotoxin Level	<1 EU/µg, determined by LAL method.
Reconstitution	It is not recommended to reconstitute to a concentration less than 100 µg/mL in ddH ₂ O.
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background

The PDGF R alpha protein is a tyrosine-protein kinase that functions as a cell-surface receptor for PDGFA, PDGFB, and PDGFC. It plays a crucial role in embryonic development, cell proliferation, survival, and chemotaxis. Its effects on cell proliferation and migration vary depending on the context. The protein is also involved in the differentiation of bone marrow-derived mesenchymal stem cells and is required for normal skeleton development and cephalic closure during embryonic development. Additionally, it is essential for the development of the gastrointestinal tract lining, recruitment of mesenchymal cells, and normal development of intestinal villi. The protein contributes to cell migration and chemotaxis in wound healing and plays a role in platelet activation, secretion of agonists from platelet granules, and thrombin-induced platelet aggregation. Activation of the protein occurs upon binding to its ligands, which can be homodimeric PDGFA, homodimeric PDGFB, heterodimers formed by PDGFA and PDGFB, or homodimeric PDGFC. This activation leads to the activation of multiple signaling cascades, with the response depending on the specific ligand and being modulated by the formation of heterodimers between PDGFRA and PDGFRB. The protein phosphorylates PIK3R1, PLCG1, and PTPN11, resulting in various cellular responses such as the production of diacylglycerol and inositol 1,4,5-trisphosphate, mobilization of cytosolic Ca(2+), activation of protein kinase C, and activation of the AKT1 signaling pathway. It also mediates the

activation of HRAS and MAP kinases MAPK1/ERK2 and/or MAPK3/ERK1. Furthermore, it promotes the activation of STAT family members STAT1, STAT3, and STAT5A and/or STAT5B. The receptor signaling is regulated by protein phosphatases that dephosphorylate the receptor and its downstream effectors, as well as by rapid internalization of the activated receptor.

Caution: Product has not been fully validated for medical applications. For research use only.

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