

Recombinant Rat PGFRA Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP52307

Size: 10ug, 100ug

Protein Name: Platelet-derived growth factor receptor alpha (PDGF-R-alpha) (PDGFR-alpha) (EC 2.7.10.1) (Alpha platelet-derived growth factor receptor) (Alpha-type platelet-derived growth factor receptor) (CD140 antigen-like family member A) (Platelet-derived growth factor alpha receptor) (CD antigen CD140a)

Synonym: Pdgfra

UniProt ID: P20786

UniProt Link: www.uniprot.org/uniprotkb/P20786/entry

Species Source: Rat

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 1088 AA

Molecular Weight: 123 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MGTSQAFLVLSCLLTGPSLIVCQLLLPSILPNENEKIVPLSSSFSLRCFGESEVSWQHMPMSEEDPNV
EIRTEENSSSLFVTVLEVVNASAAHTGWYTCYYNHTQTEESEIEGRHIYIYVPDPDMAFVPLGMTDSL
VIVEEDDSAIIPCLTTDPDTEVTLHNNGRLVPASYDSRQGFNGTFSVGPYICEATVRGRFTKTSEFNV
YALKATSELNLEMDTRQTVYKAGETIVVTCVFNNEVVDLQWTPGGEVRNKGITMLEEIKLPSIKLVY
TLTVPKATVKDSGDYECARQATKEVKEMKTVTISVHEKGFVQIRPTFGHLETVNLHQVREFVVEVQ
AYPTPRISWLKDNLTLIENLTEITTDVQRSQETRYQSKLKLIRAKEEDSGHYTIIVQNDDDMKSYTFEL
STLVPASILELVDDHHGSGGGQTVRCTAEGTPLPNIEWMICKDIKKCNNDTSWTVLASNVSNITEFH
QRGRSTVEGRVSFAKVEETIAVRCLAKNDLGIGNRELKLVAPSLRSELTVA AAVLVLLVIVIVSLIVLVVI
WKQKPRYEIRWRVIESISPDGHEYIYVDPMQLPYDSRWEFPRDGLVLGRILGSGAFGKVVEGTAYGL
SRSQPVMMKVAVKMLKPTARSSEKQALMSELKIMTHLGPHLNIVNLLGACTKSGPIYIITEYCFYGDLVN
YLHKNRDSFMSRHPKPKDLDIFGLNPADESTRSYVILSFENNGDYVDMKQADTTQYVPMLEKE
VSKYSIDIQRSLYDRPASYYKKKSMMLDSEAKNLLSDDDSEGLTLLDLLSFTYQVARGMEFLASKNCVHR
DLAARNVLLAQQGKIVKICDFGLARDIMHDSNYVSKGSTFLPVKWMAPESIFDNLYTTLSDVWSYGVLL
WEIFSLGGTPYPGMMVDSTFYNNIKISGYRMAKPDHATSEVYEIMVQCWNSEPEKRPSFYHLSEIVE
NLLPGQYKKSIEKIHLDFLKSDHPAVARMRVDSDNAYIGVTYKNEEDKLKEWEGGLDEQRLSADSG



YIIPDPIDPVPEEEDLGKRNHRSSQTSEESALETGSSSSTFIKREDETIEDIDMMDDIGIDSSDLVEDS
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3. Buffer Composition

Liquid format: PBS-based buffer containing 50% glycerol. Glycerol concentration can be customized upon customer request; please state special requirements when placing your order.

Lyophilized format: Buffer before lyophilization is PBS supplemented with 6% trehalose.

4. Storage Conditions

Upon receipt, store the product at -20 °C or -80 °C. Aliquot the product for on-demand use to preserve protein activity and prevent denaturation and inactivation caused by repeated freeze-thaw cycles.

5. Product Description

This product is recombinant Platelet-derived growth factor receptor alpha (PDGF-R-alpha) (PDGFR-alpha) (EC 2.7.10.1) (Alpha platelet-derived growth factor receptor) (Alpha-type platelet-derived growth factor receptor) (CD140 antigen-like family member A) (Platelet-derived growth factor alpha receptor) (CD antigen CD140a) produced using the HEK293T eukaryotic cell expression system. It is suitable for in-vitro functional assays, protein-protein interaction studies, antibody preparation and other biomedical research applications.

Protein Function: Tyrosine-protein kinase that acts as a cell-surface receptor for PDGFA, PDGFB and PDGFC and plays an essential role in the regulation of embryonic development, cell proliferation, survival and chemotaxis. Depending on the context, promotes or inhibits cell proliferation and cell migration. Plays an important role in the differentiation of bone marrow-derived mesenchymal stem cells. Required for normal skeleton development and cephalic closure during embryonic development. Required for normal development of the mucosa lining the gastrointestinal tract, and for recruitment of mesenchymal cells and normal development of intestinal villi. Plays a role in cell migration and chemotaxis in wound healing. Plays a role in platelet activation, secretion of agonists from platelet granules, and in thrombin-induced platelet aggregation. Binding of its cognate ligands - homodimeric PDGFA, homodimeric PDGFB, heterodimers formed by PDGFA and PDGFB or homodimeric PDGFC - leads to the activation of several signaling cascades; the response depends on the nature of the bound ligand and is modulated by the formation of heterodimers between PDGFRA and PDGFRB. Phosphorylates PIK3R1, PLCG1, and PTPN11. Activation of PLCG1 leads to the production of the cellular signaling molecules diacylglycerol and inositol 1,4,5-trisphosphate, mobilization of cytosolic Ca²⁺ and the activation of protein kinase C. Phosphorylates PIK3R1, the regulatory subunit of phosphatidylinositol 3-kinase, and thereby mediates activation of the AKT1 signaling pathway. Mediates activation of HRAS and of the MAP kinases MAPK1/ERK2 and/or MAPK3/ERK1. Promotes activation of STAT family members STAT1, STAT3 and STAT5A and/or STAT5B. Receptor signaling is down-regulated by protein phosphatases that dephosphorylate the receptor and its down-stream effectors, and by rapid internalization of the activated receptor (By similarity).

Subcellular Localization: Cell membrane ; Single-pass type I membrane protein . Cell projection, cilium . Golgi apparatus .

6. Notes



- Avoid repeated freeze-thaw cycles to maintain protein stability and biological activity.
- Please specify special buffer-composition requirements at the time of order placement.
- For research use only. Not intended for clinical diagnosis, therapeutic use or commercial manufacturing.