

Recombinant Rat PTPRQ Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP52222

Size: 10ug, 100ug

Protein Name: Phosphatidylinositol phosphatase PTPRQ (EC 3.1.3.36) (EC 3.1.3.67) (EC 3.1.3.86) (EC 3.1.3.95) (Protein-tyrosine phosphatase receptor-type expressed by glomerular mesangial cells protein 1) (rPTP-GMC1) (Receptor-type tyrosine-protein phosphatase Q) (PTP-RQ) (R-PTP-Q)

Synonym: Ptpqr, Ptpgmc1

UniProt ID: O88488

UniProt Link: www.uniprot.org/uniprotkb/O88488/entry

Species Source: Rat

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 2302 AA

Molecular Weight: 257 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MMDFHFSFLFLLIGTSESQVDVSSSFDGTGYDITLSSVSATTYSSPVSRTLATNVTKPGPPVFLAGER
VGSAGILLSWNTPPNPNGRIISYVVKYKEVCPWMQTAYTRARAKPDSLEVLLTNLNP GTTYEIKVAAE
NNAGIGVFSDPFLFQTAESAPGKVVNLTVEALNYS AVNLIWYLPRQPNGKITSFKISVKHARSGIVVKD
VSLRVEDILSGKLPECNENSESFLWSTTSPSPTLGRVTPTVRTTQSSSTAARSKISSVWKEPISFVVT
HLRPYTTYLFESAVTTEAGYIDSTIVRTPESVPEGPPQNCIMGNVTGKAFSISWDPPTIVTGKFSYRV
ELYGPSGRILDNSTKDLRFAFTHLTPFTMYDVYVAAETSAGVGPKSNLSVFTPPDVP GAVFDLQIAEV
EATEIRITWRKPRQPNGIISQYRVKVSLETGVVLENTLLTGQDESISNPM SPEIMNLVDPMIGFYEGS
GEMSSDLHSPASFIYN SHPHNDFPA STRAEEQSSPVVTT RNQYMTDITAEQLSYVVRRLVPFTEHTI
SVSAFTIMGEGPPTVLTVRTREQVPSSIQIINYKNISSSSILLYWDPPEYPNGKITHYTIYATELDTNRAF
QMTTVDNSFLITGLKKYTRYKMRVAASTHVGESSLSEENDIFVRTPEDEPESSPQDVQVTGVSPSEL
RLKWSPPEKPNGIIAYEVLYQNADTLFVKNTSTTDIIISDLKPYTLYNISIRSYTRLGHGNQSSSLLSVR
TSETVPDSAPENITYKNISSGEIEISFLPPRSPNGIIQKYTIYLRKRSNSHEARTINTTSLTQTIGGLKKYTH
YVIEVSASTLKGEGRSRPISILTEEDAPDSPPNF SVKQLSGVTVM LSWQPPLEPNGIILYYTVYVWD
KSSLRAINATEASLVLSLDYNDY GACVTASTRFGDGNARSSIINFRTPEGEPSDPPNDVHYVNLSS
SSIILFWTTPPVKPNGIQYYSVYYQNTSGTFVQNFTLLQVTKESDNVTVSARIYRLAIFSYYTFWLTAST
SVGNGNKSSDIIHVYTDQDIPEGPVGNLTFESISSTAIHVSWEPPSQPNGLVFYYLSLNLQQSPPRHM



IPPLVTYENSIDFDDLEKYTDYIFKITPSTKGFSEYTTQLHIKTEEDVPDTPPIINTFKNLSSTSILLSW
DPPLKPNGAILGYHLTLQGPHANHTFVTSGNHIVLEELSPFTLYSFFAAARTMKGLGPSSILFFYTDES
APLAPPQNLTINYSDFVWLTWSPSPPLPGGIVKVYSFKIHEHETDTVFYKNISGLQTDKLEGLEPVS
TYSVSVSAFTKVGNGNQYSNVVEFTTQESVPEAVRNIECVARDWQSVSVRWDPPrKTNGIIHYMIT
VGGNSTKVSPrDPTyTFTKLLPNTSYVFEVRASTSAGEGNEsRCDISTLPETVPSAPTNVAFsNVQS
TSATLTWTKPDtIFGYFQNYKITTLQRAQKCREWEPEECIEHQKDQYLYEANQTEETVHGLKKFRWY
RFQVAASTNVGYsNASEWISTQTLPGPDPGPENVHVATSPFGINISWSEPAVITGPTFYLIDVKSV
DDDDFNISFLKSNEENKTTEINNLEVFTRYsSVITAFVGNVSRAyTDGKSSAEVIITLESVPKDPPNN
MTFQKIPDEVTKFQLTFLPPSQPNGNIRVYQALVYREDDPTAVQIHNFsIIQKTDTSIAMLEGLKGGHT
YNISVYAINSAGAGPKVQMRITMDIKAPARPKSKPIPIRDATGKLLVTSTTITIRMPICyYNDdHGPIRNV
QVLVAETGAQQDGNVTkwyDAYFNKARPYFTNEGFPNPPCIEGKTKFSGNEEIYVIGADNACMIPGN
EEKICNGPLKPKKQYLfKFRATNVMGQFTDSEYSDPIKTLGEGLSERTVEIILSVTLcILSIILLGTAIFAF
VRIRQKQKEGGTYSPRDAEIIDTKFKLDQLITVADLELKDRLTRLLSYRKSIPKSKSFLQHVEELCT
NSNLKFQEEFSELPKFLQDLSSTDA DL PWNRAKNRFPNIKPYNNNRVKLIADVSLPGSDYINAsYVSG
YLCpNEFIATQGPLPGTVGDFWRMVWETRTKTLVMLTQCfEKGRIRCHQYWPEDNKpVTVFGDIVIT
KLMEIDIQDWTIRDLKIERHGDCMTVRQCNFTGWPEHGVpENTTPLIHfVKLVRTSRAHDtTPMVVH
CSAGVGRTGVFIALDHLTQHINNHDfVDIYGLVAELRSErMCMVQNLAQYIFLHQcILDLLSNKGGHQ
PVCfVNYSTLQKMDSLDA ME GDVELEWEETM

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 Phosphatidylinositol phosphatase PTPRQ (EC 3.1.3.36) (EC 3.1.3.67) (EC 3.1.3.86) (EC 3.1.3.95) (Protein-tyrosine phosphatase receptor-type expressed by glomerular mesangial cells protein 1) (rPTP-GMC1) (Receptor-type tyrosine-protein phosphatase Q) (PTP-RQ) (R-PTP-Q) 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: Dephosphorylates phosphatidylinositol phosphates, such as phosphatidylinositol 3,4,5-trisphosphate (PIP3) and phosphatidylinositol 3,5-diphosphates, with preference for PIP3 (PubMed:12802008). Phosphate can be hydrolyzed from the D3 and D5 positions in the inositol ring (PubMed:12802008). Has low tyrosine-protein phosphatase activity in vitro; however, the relevance of such activity in vivo is unclear (PubMed:12802008). Plays an important role in adipogenesis of mesenchymal stem cells (MSCs). Regulates the phosphorylation state of AKT1 by regulating the levels of PIP3 level in MSCs and preadipocyte cells (By similarity). Required for hair bundle maturation, a process that enables hair cells to detect and transmit sound and balance signals effectively, therefore affecting auditory function. May act by regulating the level of phosphatidylinositol 4,5-bisphosphate (PIP2) level in the basal region of hair bundles (By similarity).

Subcellular Localization: Cell projection, stereocilium . Apical cell membrane ; Single-pass type I membrane protein . Basal cell membrane ; Single-pass type I membrane protein . Note=Detected at the stereocilium base and at the apical cell membrane in mature hair cells (By similarity). Forms ring-like structures in the stereocilium taper region (By similarity). Detected at the basal cell membrane in fetal kidney podocytes (By similarity). A small isoform that lacks the N-terminal part and starts after the transmembrane region localizes in the cytoplasm (PubMed:12837292).

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.