

Recombinant Mouse TIE2 Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP51551

Size: 10ug, 100ug

Protein Name: Angiopoietin-1 receptor (EC 2.7.10.1) (Endothelial tyrosine kinase) (HYK) (STK1) (Tunica interna endothelial cell kinase) (Tyrosine kinase with Ig and EGF homology domains-2) (Tyrosine-protein kinase receptor TEK) (Tyrosine-protein kinase receptor TIE-2) (mTIE2) (p140 TEK) (CD antigen CD202b)

Synonym: Tek, Hyk, Tie-2, Tie2

UniProt ID: Q02858

UniProt Link: www.uniprot.org/uniprotkb/Q02858/entry

Species Source: Mouse

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 1122 AA

Molecular Weight: 126 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MDSL AGLVLCGV SLLLYGV VEGAMD LILINSLPLVSDAETSLTCIASGWHPHEPITIGRDFEALMNQH
QDPLEVTQDVTREWAKKVVWKREKASKINGAYFCEGRVVRGQAIRITMKMRQQASFLPATLTMTVD
RGDNVNISFKKVLKEEDAVIYKNGSFIHVSVPHEVPDILEVHLPHAQPDAGVYSARYIGGNLFTSAF
TRLIVRRCEAQKWGPDCSRPCTTCKNNGVCHEDTGEICPPGFMGRTCEKACEPHTFGRTCKERC
SGPEGCKSYVFCLPDYPYGCSCATGWRGLQCNEACPSGYYGPDCKLRCHCTNEEICDRFQGCLCS
QGWQGLQCEKEGRPRMTPQIEDLPDHIEVNSGKFNPKASGWPLPTSEEMTLVKPDGTVLQPNDF
NYTDRFSVAIFTVNRVLPPDSGVVWVCSVNTVAGMVEKPFNISVKVLPEPLHAPNVIDTGHNFAINISS
EPYFGDGPISKKLFYKPVNQAWKYIEVTNEIFTLNYLEPRTDYELCVQLARPGEGGEGHPGPVRRF
TTASIGLPPPRGLSLLPKSQTALNLTWQPIFTNSEDEFYVEVERRSLQTTSDQQNIKVPGNLTSVLLS
NLVPREQYTVRARVNTKAQGEWSEELRAWTLSDILPPQPENIKISNITDSTAMVSWTIVDGYSISSIIIR
YKVQGKNEQDHIDVKIKNATVTQYQLKGLEPETTYHVDIFAENNIGSSNPAFSHELRTLPHSPASADL
GGGKMILLIAILGSAGMTCITVLLAFLIMLQLKRANVQRRMAQAFQNREEPVAVQFNSGTLALNRKAKN
NPDPTIYPVLDWNDIKFQDVI GEGNFGQVLKARIKKDGLRMDAAIKRMKEYASKDDHRDFAGELEVL
CKLGHHPNIINLLGACEHRGYLYLAIEYAPHGNLLDFLRKS RVLETDPAF AIANSTASTLSSQQLLHFA
ADVARGMDYLSQKQFIHRDLAARNILVGENYIAKIADFGLSRGQEVYVKKTMGRLPVRWMAIESLNY



SVYTTNSDVWSYGVLLWEIVSLGGTPYCGMTCAELYEKLPQGYRLEKPLNCDDEVYDLMRQCWRE
KPYERPSFAQILVSLNRMLEERKTYVNTTLYEKFTYAGIDCSAEAAA

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 Angiopoietin-1 receptor (EC 2.7.10.1) (Endothelial tyrosine kinase) (HYK) (STK1) (Tunica interna endothelial cell kinase) (Tyrosine kinase with Ig and EGF homology domains-2) (Tyrosine-protein kinase receptor TEK) (Tyrosine-protein kinase receptor TIE-2) (mTIE2) (p140 TEK) (CD antigen CD202b) 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 ANGPT1, ANGPT2 and ANGPT4 and regulates angiogenesis, endothelial cell survival, proliferation, migration, adhesion and cell spreading, reorganization of the actin cytoskeleton, but also maintenance of vascular quiescence. Has anti-inflammatory effects by preventing the leakage of pro-inflammatory plasma proteins and leukocytes from blood vessels. Required for normal angiogenesis and heart development during embryogenesis. Required for postnatal hematopoiesis. After birth, activates or inhibits angiogenesis, depending on the context. Inhibits angiogenesis and promotes vascular stability in quiescent vessels, where endothelial cells have tight contacts. In quiescent vessels, ANGPT1 oligomers recruit TEK to cell-cell contacts, forming complexes with TEK molecules from adjoining cells, and this leads to preferential activation of phosphatidylinositol 3-kinase and the AKT1 signaling cascades. In migrating endothelial cells that lack cell-cell adhesions, ANGPT1 recruits TEK to contacts with the extracellular matrix, leading to the formation of focal adhesion complexes, activation of PTK2/FAK and of the downstream kinases MAPK1/ERK2 and MAPK3/ERK1, and ultimately to the stimulation of sprouting angiogenesis. ANGPT1 signaling triggers receptor dimerization and autophosphorylation at specific tyrosine residues that then serve as binding sites for scaffold proteins and effectors. Signaling is modulated by ANGPT2 that has lower affinity for TEK, can promote TEK autophosphorylation in the absence of ANGPT1, but inhibits ANGPT1-mediated signaling by competing for the same binding site. Signaling is also modulated by formation of heterodimers with TIE1, and by proteolytic processing that gives rise to a soluble TEK extracellular domain. The soluble extracellular domain modulates signaling by functioning as decoy receptor for angiopoietins. TEK phosphorylates DOK2, GRB7, GRB14, PIK3R1, SHC1 and TIE1.

Subcellular Localization: Cell membrane; Single-pass type I membrane protein. Cell junction . Cell junction, focal adhesion . Cytoplasm, cytoskeleton . Secreted . Note=Recruited to cell-cell contacts in quiescent endothelial cells. Colocalizes with the actin cytoskeleton and at actin stress fibers during cell spreading. Recruited to the lower surface of migrating cells, especially the rear end of the cell. Proteolytic processing gives rise to a soluble extracellular domain that is secreted (By similarity).

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.