

TIE-2 Protein, Cynomolgus (HEK293, His)

Cat. No.:	HY-P78568
Synonyms:	TIE2; Tie-2; TEK; VMCM; VMCM1; CD202b; Angiopoietin-1 receptor
Species:	Cynomolgus
Source:	HEK293
Accession:	A0A2K5VRI3-1 (A23-K745)
Gene ID:	/
Molecular Weight:	95-130 kDa

PROPERTIES

AA Sequence

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AMDLILINSL   PLVSDAETSL   TCIASGWHPH   EPITIGRDFE
ALMNQHQPDL   EVTQDVTREW   AKKVVKREK    ASKINGAYFC
EGRVRGEAIR   IRTMKMRQQA   SFLPATLTMT   VDKGDNVNIS
FKKVLIKEED   AVIYKNGSFI   HSVPRHEVPD   ILEVHLPHAQ
PQDAGVYSAR   YIGGNLFTSA   FTRLIVRRCE   AQKWGPECNR
LCTVCVNNGV   CHEDTGECIC   PPGFMGRTCE   KACERHTFGR
TCKERCSGQD   GCKSYVFCLP   DPYGCSCATG   WKGLQCNEAC
HHGFYGPDKK   LRCSCSNGET   CDRFQGCLCS   PGRQGLQCER
EGIPRMTPKI   VDLPDHIEVN   SGKFNPICKA   SGWPLPTNEE
MTLVKPDGTV   LHPKDFNHTD   HFSVAIFTIH   RILPPDSGVW
VCSANTVAGM   VEKPFNISVK   VLPKPLNAPN   VIDTGHNFAV
INISSEPYFG   DGPICKSKLL   YKPVNHYEAW   RHIQVTNEIV
TLNHLEPRTE   YELCVQLVRR   GEGGEGHPGP   VRRFTTASIG
LPPPRGLNLL   PKSQTTLNLT   WQPIFPSSD   DFYVEVERRS
VQKSDQQNIK   VPGNLTSVLL  >NNLHPREQYV   VRARVNTKAQ
GEWSEDLTAW   T LSDILPPQP   ENIKISNITH   SSAVISWTIL
DGYSISSITI   RYKVQGKNED   QHIDVKIKNA   TITQYQLKGL
EPETAYQVDI   FAENNI GSSN   PAFSHELVTL   PESEAPADLG
GGK
  
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Biological Activity Immobilized Cynomolgus TIE-2 at 2 µg/mL (100 µL/well) can bind Biotinylated Angiopoietin-2. The ED₅₀ for this effect is 18.48 ng/mL, corresponding to a specific activity is 5.4×10⁴ Unit/mg.

Appearance Lyophilized powder.

Formulation Lyophilized a 0.22 µm filtered solution of PBS, pH 7.4.

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 ddH₂O. For long term storage it is recommended to add a carrier protein (0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose).

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

TIE-2 protein, a tyrosine-protein kinase, acts as a cell-surface receptor for ANGPT1, ANGPT2, and ANGPT4, orchestrating a comprehensive range of processes critical for angiogenesis, endothelial cell survival, proliferation, migration, adhesion, and cell spreading, as well as the maintenance of vascular quiescence. Beyond its essential role in embryonic angiogenesis and heart development, TIE-2 plays a vital role in post-natal hematopoiesis. Its function post-birth involves context-dependent activation or inhibition of angiogenesis. In quiescent vessels, ANGPT1 oligomers recruit TIE-2 to cell-cell contacts, fostering complex formation with neighboring TIE-2 molecules and preferential activation of the phosphatidylinositol 3-kinase and AKT1 signaling cascades, leading to vascular stability. Conversely, in migrating endothelial cells lacking cell-cell adhesions, ANGPT1 recruits TIE-2 to contacts with the extracellular matrix, activating focal adhesion complexes, PTK2/FAK, and downstream kinases MAPK1/ERK2 and MAPK3/ERK1, stimulating sprouting angiogenesis. ANGPT1-triggered TIE-2 signaling involves receptor dimerization and autophosphorylation at specific tyrosine residues, serving as binding sites for scaffold proteins and effectors. Modulation by ANGPT2, which competes for the same binding site, and formation of heterodimers with TIE1, as well as proteolytic processing yielding a soluble extracellular domain, further regulate TIE-2 signaling. The soluble extracellular domain functions as a decoy receptor for angiopoietins, influencing signaling dynamics. TIE-2 phosphorylates DOK2, GRB7, GRB14, PIK3R1, SHC1, and TIE1, underscoring its intricate role in finely tuning a myriad of cellular responses.

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

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