

TIE-2 Protein, Human (Biotinylated, HEK293, His)

Cat. No.:	HY-P77542
Synonyms:	Angiopoietin-1 receptor; CD202b; hTIE2; p140 TEK; Tie2; VMCM
Species:	Human
Source:	HEK293
Accession:	Q02763 (A23-K745)
Gene ID:	7010
Molecular Weight:	Approximately 99.9 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

TIE-2, a tyrosine-protein kinase, acts as a cell-surface receptor for ANGPT1, ANGPT2, and ANGPT4, exerting comprehensive control over angiogenesis, endothelial cell behavior, and vascular stability. It regulates diverse processes, including endothelial cell survival, proliferation, migration, adhesion, and actin cytoskeleton reorganization, while also playing a crucial role in maintaining vascular quiescence and preventing the leakage of pro-inflammatory plasma proteins and leukocytes from blood vessels, resulting in anti-inflammatory effects. Essential for normal angiogenesis during embryonic development and post-natal hematopoiesis, TIE-2 exhibits context-dependent angiogenic activation or inhibition after birth. In quiescent vessels, ANGPT1, oligomerizing, recruits TIE-2 to cell-cell contacts, activating phosphatidylinositol 3-kinase and AKT1 signaling cascades, promoting vascular stability. Conversely, in migrating endothelial cells lacking cell-cell adhesions, ANGPT1 recruits TIE-2 to extracellular matrix contacts, stimulating sprouting angiogenesis through focal adhesion complex formation and activation of downstream kinases. ANGPT1 signaling induces receptor dimerization and autophosphorylation, providing binding sites for scaffold proteins and effectors. Modulation by ANGPT2, TIE1 heterodimer formation, and proteolytic processing into a soluble extracellular domain contribute to the intricate regulation of TIE-2 signaling, with the soluble domain acting as a decoy receptor for angiopoietins. TIE-2 phosphorylates DOK2, GRB7, GRB14,

PIK3R1, SHC1, and TIE1.

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

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