

VEGFR-3/FLT4 Protein, Human (HEK293, hFc)

Cat. No.:	HY-P74469
Synonyms:	Vascular endothelial growth factor receptor 3; VEGFR-3; FLT-4
Species:	Human
Source:	HEK293
Accession:	P35916 (Y25-I776)
Gene ID:	2324
Molecular Weight:	Approximately 160&85&75 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

VEGFR-2 protein is a tyrosine-protein kinase receptor that plays a crucial role in regulating various processes including angiogenesis, vascular development, vascular permeability, and embryonic hematopoiesis. It acts as a cell-surface receptor for VEGFA, VEGFC, and VEGFD, promoting the proliferation, survival, migration, and differentiation of endothelial cells. Additionally, isoforms lacking a transmembrane domain, such as isoform 2, act as decoy receptors for VEGFA, VEGFC, and/or VEGFD, serving as negative regulators of lymphangiogenesis by inhibiting the binding of these growth factors to FLT4. VEGFR-2 also forms heterodimers with FLT1 and FLT4, modulating their signaling. Activation of isoform 1 by vascular growth factors triggers multiple signaling cascades, including the activation of PLCG1, resulting in the production of diacylglycerol and inositol 1,4,5-trisphosphate, as well as the activation of protein kinase C. It also activates MAPK1/ERK2, MAPK3/ERK1, and AKT1 signaling pathways, leading to various cellular responses. Moreover, VEGFR-2 phosphorylates PIK3R1, facilitating the activation of phosphatidylinositol 3-kinase, and promotes actin cytoskeleton reorganization and activation of PTK2/FAK1. Its role in NOS2 and NOS3 induction leads to the production of nitric oxide (NO) by endothelial cells. Additionally, VEGFR-2 phosphorylates PLCG1 and promotes phosphorylation of FYN, NCK1, NOS3, PIK3R1, PTK2/FAK1, and SRC, further contributing to its diverse cellular functions.

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

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