

VEGFR-2 Protein, Cynomolgus (HEK293, His)

Cat. No.:	HY-P74473
Synonyms:	Vascular endothelial growth factor receptor 2; VEGFR-2; FLK-1; CD309
Species:	Cynomolgus
Source:	HEK293
Accession:	EHH53800 (A20-E764)
Gene ID:	/
Molecular Weight:	Approximately 115-180 kDa

PROPERTIES

AA Sequence

ASVGLPSVSL	DLPRLSIQKD	ILTIKANTTL	QITCRGQRDL
DWLWPNNQSG	SEQRVEVTEC	SDGLFCKTLT	IPKVI GNDTG
AYKCFYRETD	LASVIYVYVQ	DYRSPFIASV	SDQHGVVYIT
ENKNKTVVIP	CLGSISNLNV	SLCARYPEKR	FVPDGNRISW
DSKKGFTIPS	YMISYAGMVF	CEAKINDESY	QSIMYIVVVV
GYRIYDVVLS	PSHGVELSVG	EKLVLNCTAR	TELVGIDFN
WEYPPSSKHQH	KKLVNRDLKT	QSGSEMKKFL	STLTIDGVTR
SDQGLYTCAA	SSGLMTKKNS	TFVRVHEKPF	VAFGSGMESL
VEATLGERVR	IPVKYLGYP	PEIKWYKNGI	PLESNHTVKV
GHVLTIMEVS	ERDTGNYTVI	LTNPISKEKQ	SHVVS LVVYV
PPQIGEKSLI	SPVDSYQYGT	TQTLTCTVYA	IPPPHHIHWY
WQLEEECPNE	PSQAVSVTNP	YPC EEWRSVE	DFQGGNKIEV
NKNQFALIEG	KNKTVSTLVI	QAANVSALYK	CEAVNKVGRG
ERVISFHVTR	GPEITLQPD	QPT EQESVSL	WCTADKSTFE
NLTWYKLG PQ	PLPVHVGELP	TPVCKNLDTL	WKLNATIFSN
STNDILIMEL	KNASLQDQGD	YVCVAQDRKT	KKRHC VVRQL
TVLERVAPMI	TGNLENQTTS	IGETIEVSCT	ASGNPPPQIM
WFKDNETLVE	DSGIVLKDGN	RNLTI RRVRK	EDEGLYTCQA
CSVLGCAKVE	AFFIEGAQE	KTNLE	

Biological Activity

Measured by its binding ability in a functional ELISA. Immobilized Recombinant Human VEGF 165 is present at 2 µg/mL can bind Cynomolgus VEGFR-2. The ED₅₀ for this effect is 53.84 ng/mL.

Appearance

Lyophilized powder

Formulation

Lyophilized from a 0.2 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**

VEGFR-2 protein, a tyrosine-protein kinase, serves as a cell-surface receptor for VEGFA, VEGFC, and VEGFD, playing a pivotal role in the intricate regulation of angiogenesis, vascular development, vascular permeability, and embryonic hematopoiesis. It actively promotes the proliferation, survival, migration, and differentiation of endothelial cells, while also influencing the reorganization of the actin cytoskeleton. Certain isoforms, lacking a transmembrane domain like isoform 2 and isoform 3, may function as decoy receptors, modulating VEGFA, VEGFC, and/or VEGFD signaling. Specifically, isoform 2 acts as a negative regulator of VEGFA- and VEGFC-mediated lymphangiogenesis by limiting the availability of free VEGFA and/or VEGFC, preventing their binding to FLT4. VEGFR-2 modulates FLT1 and FLT4 signaling through heterodimer formation. Binding of vascular growth factors to isoform 1 triggers multiple signaling cascades, including the activation of PLCG1, resulting in the production of diacylglycerol and inositol 1,4,5-trisphosphate and the subsequent activation of protein kinase C. Additionally, VEGFR-2 mediates the activation of MAP kinase signaling pathways, AKT1 signaling pathway, and the phosphorylation of PIK3R1, contributing to the reorganization of the actin cytoskeleton and the activation of PTK2/FAK1. Its crucial role extends to facilitating VEGFA-mediated induction of NOS2 and NOS3, leading to the production of the signaling molecule nitric oxide (NO) by endothelial cells. VEGFR-2's phosphorylation activity includes PLCG1, FYN, NCK1, NOS3, PIK3R1, PTK2/FAK1, and SRC, highlighting its comprehensive involvement in modulating diverse cellular processes.

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

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