

Cytokines

Human Recombinant VEGF R2/KDR Fc

Vascular endothelial growth factor receptor 2/kinase insert domain receptor, Fc tag

Catalog # 78130

50 µg



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TOLL FREE PHONE 1 800 667 0322 • PHONE +1 604 877 0713

INFO@STEMCELL.COM • TECHSUPPORT@STEMCELL.COM

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Product Description

Vascular endothelial growth factor receptor 2/kinase insert domain receptor (VEGF R2/KDR) belongs to the class III subfamily of receptor tyrosine kinases. It is expressed on endothelial cells, endothelial progenitor cells, pancreatic duct cells, retinal progenitor cells, and megakaryocytes (Yousoufian et al.). KDR binds VEGF, which results in activation of Raf/MEK/ERK and PI3K/AKT pathways, which in turn regulate vasculogenesis and angiogenesis (Ferrara et al.; Yousoufian et al.). Studies in mouse models demonstrate that activation of KDR on hepatic endothelial cells stimulates expression of WNT2 and hepatocyte growth factor, which leads to liver regeneration (Rafii et al.). Hematopoietic regeneration and thrombopoiesis after cancer treatment is impaired in the absence of KDR in endothelial cells (Hooper et al.). KDR signaling is also implicated in lung regeneration (Rafii et al.). This protein contains a C-terminus linker (IEGRMD) to an Fc tag (Human IgG1).

Product Information

Alternative Names: CD309, EC 2.7.10, Fetal liver kinase 1, Flk1, Flk-1, FLK1 tyrosine kinase growth factor receptor, Protein-tyrosine kinase receptor flk-1, Soluble VEGFR2, VEGFR, VEGFR2, VEGFR-2

Accession Number: P35968

Amino Acid Sequence: ASVGLPSVSL DLPRLSIQKD ILTIKANTTL QITCRGQRDL DWLWPNNQSG SEQRVEVTEC SDGLFCKTLT IPKVIGNDTG AYKCFYRETD LASVIYVYVQ DYRSPFIASV SDQHGVVYIT ENKNKTVVIP CLGSISNLNV SLCARYPEKR FVPDGNRISW DSKKGFTIPS YMISYAGMVF CEAKINDESY QSIMYIVVVV GYRIYDVVLS PSHGIELSVG EKLVLNCTAR TELNVGIDFN WEYPSKHKQH KKLVNRLDKT QSGSEMKKFL STLTIDGVTR SDQGLYTCAA SSGMLTKKNS TFVRVHEKPF VAFGSGMESL VEATVGERVR IPAKYLGYPP PEIKWYKNGI PLESNHTIKA GHVLTIMEVS ERDTGNYTVI LTNPISKEKQ SHVVSLVVYV PPQIGEKSLI SPVDSYQYGT TQTLTCTVYA IPPPHHHHWY WQLEEECANE PSQAVSVTNP YPCEEWRSVE DFQGGNKIEV NKNQFALIEG KNKTVSTLVI QAANVSALYK CEAVNKVGRG ERVISFHVTR GPEITLQPDM QPTEQESVSL WCTADRSTFE NLTWYKLGQP PLPIHVGELP TPVCKNLDL WKLNATMFSN STNDILIMEL KNASLQDQGD YVCLAQDRKT KKRHCVVRQL TVLERVAPTI TGNLENQTT IGESIEVSCT ASGNPPPQIM WFKDNETLVE DSGIVLKDGN RNLTI RRVK EDEGLYTCQA CSVLGCAKVE AFFIEGAQE KTNLEIEGRM DDKTHTCPPC PAPELLGGPS VFLFPPKPKD TLMISRTPEV TCVVVDVSH DPEVKFNWYV DGVEVHNAKT KPREEQYNST YRVVSVLTVL HQDWLNGKEY KCKVSNKALP APIEKTISKA KGQPREPQVY TLPPSREEMT KNQVSLTCLV KGFYPSDIAV EWESNGQPEN NYKTTTPVLD SDGSFFLYSK LTVDKSRWQQ GNVFSCSVMH EALHNHYTQK SLSLSPGK

Predicted Molecular Mass: 109.6 kDa

Species: Human

Formulation: Lyophilized after dialysis against phosphate-buffered saline.

Source: CHO

Specifications

Activity: The specific activity is $\geq 3.3 \times 10^4$ units/mg ($EC_{50} \leq 0.03$ µg/mL) as determined by the ability to inhibit proliferation of human umbilical vein endothelial cells (HUVECs) in the presence of human VEGF-165.

Purity: $\geq 98\%$

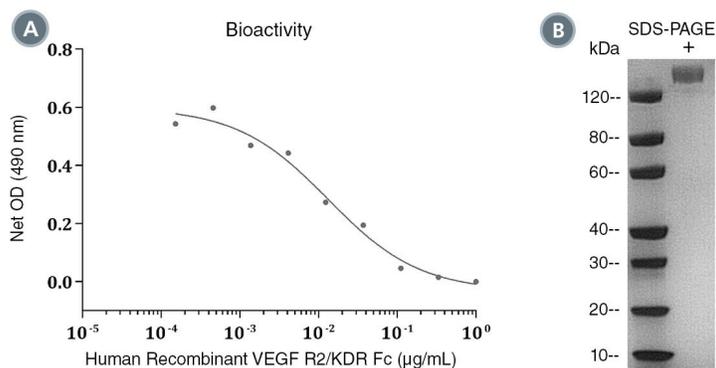
Endotoxin Level: Measured by kinetic Limulus amoebocyte lysate (LAL) analysis and is ≤ 0.2 EU/µg protein.

Preparation and Storage

- Storage:** Store at -80°C.
- Stability:** Stable as supplied for 12 months from date of receipt.
- Preparation:** Centrifuge vial before opening. Reconstitute the product in sterile water to at least 0.1 mg/mL by pipetting the solution down the sides of the vial. Do not vortex.

OPTIONAL: After reconstitution, if product will not be used immediately, dilute with concentrated bovine serum albumin (BSA) to a final BSA concentration of 0.1%. The effect of storage of stock solution on product performance should be tested for each application. As a general guide, do not store at 2 - 8°C for more than 1 week or at -20°C for more than 3 months. Avoid repeated freeze-thaw cycles.

Data



(A) The biological activity of Human Recombinant VEGF R2/KDR Fc was tested by the ability to inhibit VEGF-dependent HUVEC proliferation. Inhibition of cell proliferation was measured using a fluorometric assay method. The EC₅₀ is defined as the effective concentration of the growth factor at which cell proliferation inhibition is at 50% of maximum. The EC₅₀ in the above example is less than 0.03 µg/mL.

(B) Human Recombinant VEGF R2/KDR Fc was resolved with SDS-PAGE under reducing (+) conditions and visualized by Coomassie Blue staining. Human Recombinant VEGF R2/KDR Fc has a predicted molecular mass of 109.6 kDa.

Related Products

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References

- Ferrara N et al. (2003) The biology of VEGF and its receptors. *Nat Med* 9(6): 669–76.
- Hooper AT et al. (2009) Engraftment and reconstitution of hematopoiesis is dependent on VEGFR2-mediated regeneration of sinusoidal endothelial cells. *Cell Stem Cell* 4(3): 263–74.
- Rafii S et al. (2016) Angiocrine functions of organ-specific endothelial cells. *Nature* 529(7586): 316–25.
- Youssoufian H et al. (2007) Review: monoclonal antibodies to the vascular endothelial growth factor receptor-2 in cancer therapy. *Clin Cancer Res* 13(18 Pt 2): 5544s–8s.

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