# 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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## 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 (Youssoufian 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.; Youssoufian 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

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| 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 WEYPSSKHQH KKLVNRDLKT QSGSEMKKFL STLTIDGVTR SDQGLYTCAA SSGLMTKKNS TFVRVHEKPF VAFGSGMESL VEATVGERVR IPAKYLGYPP PEIKWYKNGI PLESNHTIKA GHVLTIMEVS ERDTGNYTVI LTNPISKEKQ SHVVSLVVYV PPQIGEKSLI SPVDSYQYGT TQTLTCTVYA IPPPHHIHWY WQLEEECANE PSQAVSVTNP YPCEEWRSVE DFQGGNKIEV NKNQFALIEG KNKTVSTLVI QAANVSALYK CEAVNKVGRG ERVISFHVTR GPEITLQPDM QPTEQESVSL WCTADRSTFE NLTWYKLGPQ PLPIHVGELP TPVCKNLDTL WKLNATMFSN STNDILIMEL KNASLQDQGD YVCLAQDRKT KKRHCVVRQL TVLERVAPTI TGNLENQTTS IGESIEVSCT ASGNPPPQIM WFKDNETLVE DSGIVLKDGN RNLTIRRVRK EDEGLYTCQA CSVLGCAKVE AFFIIEGAQE KTNLEIEGRM DDKTHTCPPC PAPELLGGPS VFLFPPKPKD TLMISRTPEV TCVVVDVSHE DPEVKFNWYV DGVEVHNAKT KPREEQYNST YRVVSVLTVL HQDWLNGKEY KCKVSNKALP APIEKTISKA KGQPREPQVY TLPPSREEMT KNQVSLTCLV KGFYPSDIAV EWESNGQPEN NYKTTPPVLD SDGSFFLYSK LTVDKSRWQQ GNVFSCSVMH EALHNHYTQK SLSLSPGK |
| Predicted Molecular Mass: | 109.6 kDa |
| Species: | Human |
| Cross Reactivity: | Not determined |
| Formulation: | Lyophilized after dialysis against phosphate-buffered saline. |
| Source: | CHO |

## Specifications

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| Activity: | The specific activity is ≥ 3.3 x 10^4 units/mg (EC50 ≤ 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: | ≥ 98% |
| Endotoxin Level: | Measured by kinetic Limulus amebocyte lysate (LAL) analysis and is ≤ 0.2 EU/µg protein. |

## Preparation and Storage

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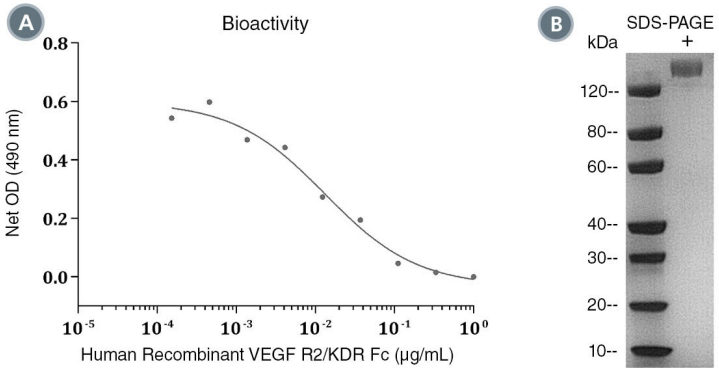
| Storage: | Store at -80°C. |
| Stability: | Stable as supplied for 12 months from date of receipt. |
| Preparation: | Centrifuge vial before opening Reconstitute the product in sterile water to at least 0 1 mg/mL by pipetting the solution down the sides of the vial. Do not vortex.<br><br>OPTIONAL: 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 example above 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.