



# SZABO SCANDIC

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## Produktinformation



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# PRODUCT INFORMATION



## VEGFR2 Extracellular Domain (human, recombinant; aa 20-327)

Item No. 31845

### Overview and Properties

**Synonyms:** CD309, Fetal Liver Kinase 1, FLK-1, KDR, Kinase Insert Domain Receptor, Vascular Endothelial Growth Factor Receptor 2

**Source:** Active recombinant C-terminal human IgG1 Fc-tagged VEGFR2 expressed in HEK293 cells

**Amino Acids:** 20-327

**Uniprot No.:** P35968

**Molecular Weight:** 61.5 kDa

**Storage:** -80°C (as supplied)

**Stability:** ≥1 year

**Purity:** *batch specific* (≥95% estimated by SDS-PAGE)

**Supplied in:** Lyophilized from sterile PBS, pH 7.4

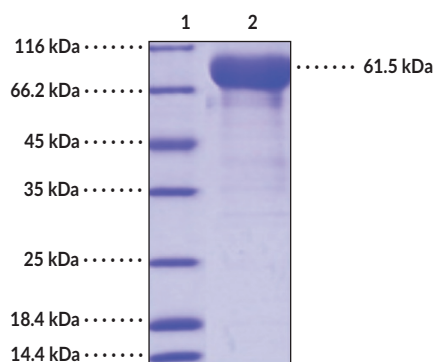
**Endotoxin Testing:** <1.0 EU/μg, determined by the LAL endotoxin assay

**Protein Concentration:** *batch specific* mg/ml

**Bioactivity:** See figures for details

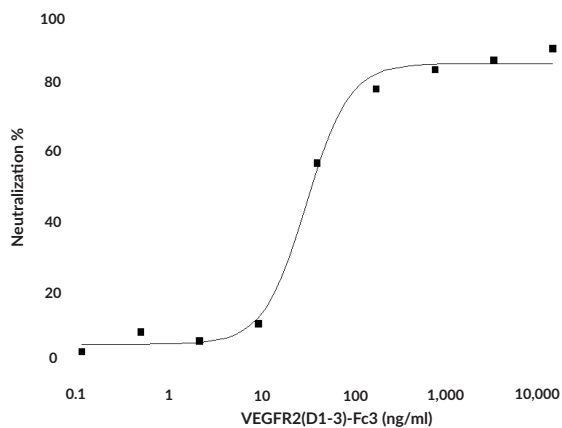
Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Images



Lane 1: MW Markers  
Lane 2: VEGFR2

SDS-PAGE Analysis of VEGFR2. This protein has a calculated molecular weight of 61.5 kDa.



Ability of VEGFR2 to inhibit VEGF-dependent proliferation of human umbilical vein endothelial cells (HUVEC) in the presence of 10 ng/mL rhVEGF165. The ED<sub>50</sub> value for this effect is 40-120 ng/mg.

WARNING  
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA  
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

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# PRODUCT INFORMATION



## Description

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VEGFR2, also known as kinase insert domain receptor (KDR), is a receptor tyrosine kinase that has roles in vascular permeability, cell proliferation and survival, and angiogenesis.<sup>1</sup> It is composed of an N-terminal extracellular ligand-binding domain, which contains seven immunoglobulin-like (Ig-like) domains, a transmembrane domain, and an intracellular tyrosine kinase domain, which is subject to phosphorylation and contains a kinase insert domain and the C-terminal domain.<sup>1,2</sup> VEGFR2 is expressed primarily in vascular and lymphatic endothelial cells, where it is bound by the growth factors VEGF-A, VEGF-C, and VEGF-D.<sup>1</sup> Upon ligand binding, VEGFR2 forms homodimers or heterodimers with VEGFR1 or VEGFR3, resulting in VEGFR2 phosphorylation and activation of a variety of intracellular signaling pathways, including the ERK/MAPK pathway, to promote endothelial cell survival, proliferation, and migration. VEGFR2 also exists in a soluble form that is generated by alternative splicing of the *KDR* pre-mRNA or proteolytic shedding and decreases angiogenesis by functioning as a decoy receptor for VEGF-A.<sup>3,4</sup> VEGFR2 expression is increased in the tumor vasculature of patients with a variety of solid tumors, including colorectal, lung, pancreatic, and breast cancer.<sup>5</sup> Cayman's VEGFR2 Extracellular Domain (human, recombinant; aa 20-327) protein can be used for enzyme activity assays. This protein is a disulfide-linked homodimer. The reduced monomer, composed of VEGFR2 (amino acids 20-327) fused to human IgG1 Fc at its C-terminus, consists of 549 amino acids, has a calculated molecular weight of 61.5 kDa, and a predicted N terminus of Ala20 after signal peptide cleavage. As a result of glycosylation, the monomer migrates at greater than 61.5 kDa by SDS-PAGE under reducing conditions.

## References

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1. Koch, S. and Claesson-Welsh, L. Signal transduction by vascular endothelial growth factor receptors. *Cold Spring Harb. Perspect. Med.* **2(7)**, a006502 (2012).
2. Park, S.A., Jeon, M.S., Ha, K.-T., *et al.* Structure and function of vascular endothelial growth factor and its receptor system. *BMB Rep.* **51(2)**, 73-78 (2018).
3. Bowler, E. and Oltean, S. Alternative splicing in angiogenesis. *Int. J. Mol. Sci.* **20(9)**, 2067 (2019).
4. Stevens, M. and Oltean, S. Modulation of receptor tyrosine kinase activity through alternative splicing of ligands and receptors in the VEGF-A/VEGFR axis. *Cells* **8(4)**, 288 (2019).
5. Smith, N.R., Baker, D., James, N.H., *et al.* Vascular endothelial growth factor receptors VEGFR-2 and VEGFR-3 are localized primarily to the vasculature in human primary solid cancers. *Clin. Cancer Res.* **16(14)**, 3548-3561 (2010).

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