Recombinant Human Soluble VEGFR-2_{D7}/Fc Chimera

FOR RESEARCH ONLY! NOT FOR HUMAN USE!

Cat.-no:	**SFC-007**
Size:	10 µg
Lot. No.:	According to product label
Country of origin:	Germany

Scientific Background

Gene:	*KDR*
Synonyms:	Vascular endothelial growth factor receptor 2, Kinase insert domain receptor, CD309

Recombinant human soluble Vascular Endothelial Growth Factor Receptor-2 (sVEGFR-2_{D1-7}) was fused with the Fc part of human IgG_1. The recombinant mature sVEGFR-2_{D1-7}/Fc is a disulfide-linked homodimeric protein. The soluble receptor protein consists of all 7 extracellular domains (Met1-Ala757), which contain all the information necessary for high affinity ligand binding.
Endothelial cells express three different vascular endothelial growth factor (VEGF) receptors, belonging to the family of receptor tyrosine kinases (RTKs). They are named VEGFR-1 (Flt-1), VEGFR-2 (KDR/Flk-1), and VEGFR-3 (Flt-4). Their expression is almost exclusively restricted to endothelial cells, but VEGFR-1 can also be found on monocytes. All VEGF-receptors have seven immunoglobulin-like extracellular domains, a single transmembrane region and an intracellular split tyrosine kinase domain. VEGFR-2 has a lower affinity for VEGF than the Flt-1 receptor, but a higher signalling activity. Mitogenic activity in endothelial cells is mainly mediated by VEGFR-2 leading to their proliferation. Differential splicing of the *flt-1* gene leads to the formation of a secreted, soluble variant of VEGFR-1 (sVEGFR-1).
No naturally occurring, secreted forms of VEGFR-2 have so far been reported. The binding of $VEGF_{165}$ to VEGFR-2 is dependent on heparin.

References

1. Röckl et al., 1998, Exp Cell Res, 241: 161-170.

Sequence

```
ASVGLPSVSLDLPRLSIQKDILTIKANTTLQITCRGQRDLDWLWPNNQSGSE
QRVEVTECSDGLFCKTLTIPKVIGNDTGAYKCFYRETDLASVIYVYVQDYRS
PFIASVSDQHGVVYITENKNKTVVIPCLGSISNLNVSLCARYPEKRFVPDGN
RISWDSKKGFTIPSYMISYAGMVFCEAKINDESYQSIMYIVVVVGYRIYDVV
LSPSHGIELSVGEKLVLNCTARTELNVGIDFNWEYPSSKHQHKKLVNRDLKT
QSGSEMKKFLSTLTIDGVTRSDQGLYTCAASSGLMTKKNSTFVRVHEKPFVA
FGSGMESLVEATVGERVRIPAKYLGYPPPEIKWYKNGIPLESNHTIKAGHVL
TIMEVSERDTGNYTVILTNPISKEKQSHVVSLVVYVPPQIGEKSLISPVDSY
QYGTTQTLTCTVYAIPPPHHIHWYWQLEEECANEPSQAVSVTNPYPCEEWRS
VEDFQGGNKIEVNKNQFALIEGKNKTVSTLVIQAANVSALYKCEAVNKVGRG
ERVISFHVTRGPEITLQPDMQPTEQESVSLWCTADRSTFENLTWYKLGPQPL
PIHVGELPTPVCKNLDTLWKLNATMFSNSTNDILIMELKNASLQDQGDYVCL
AQDRKTKKRHCVVRQLTVLERVAPTITGNLENQTTSIGESIEVSCTASGNPP
PQIMWFKDNETLVEDSGIVLKDGNRNLTIRRVRKEDEGLYTCQACSVLGCAK
VEAFFIIEGANASDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEV
TCVVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYNSTYRVVSVLTVLHQ
DWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPPSREEMTKNQV
SLTCLVKGFYPSDIAVEWESNGQPENNYKTTPPMLDSDGSFFLYSKLTVDKS
RWQQGNVFSCSVMHEALHNHYTQKSLSLSPGK
```

Database References

Protein RefSeq:	NP_002244
Uniprot ID:	P35968
mRNA RefSeq:	NM_002253

Product Specifications

Expressed in	Insect cells
Purity	> 90% by SDS-PAGE & silver stain
Buffer	PBS
Stabilizer	None
Formulation	lyophilized
Length (aa):	968
MW:	145 kDa (Monomer)
Result by N-terminal sequencing	ASVGLPSV

Stability: Lyophilized samples are stable for greater than six months at –20°C to –70°C. Reconstituted sVEGFR-2_{D7}/Fc should be stored in working aliquots at -20°C.

Reconstitution: The lyophilized sVEGFR-2/Fc should be reconstituted in water or medium to a concentration not lower than 50µg/ml.

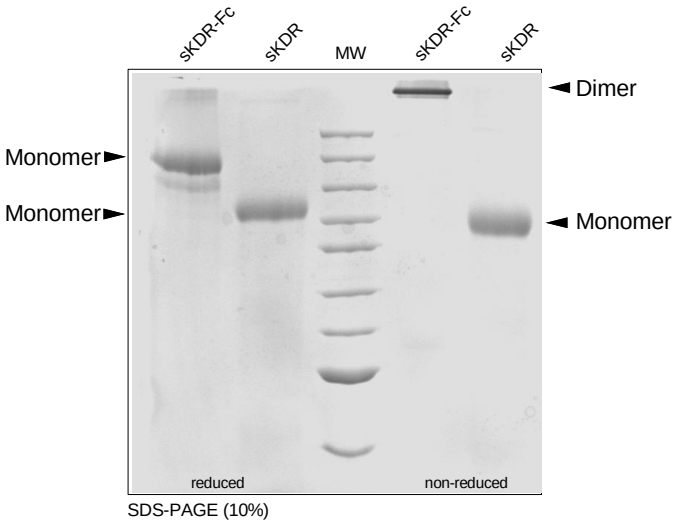
AVOID REPEATED FREEZE AND THAW CYCLES!

Biological Activity: The activity of sVEGFR-2/Fc was determined by its ability to inhibit the VEGF-dependent proliferation of human umbilical vein endothelial cells.

ReliaTech GmbH
Phone: +49 (0)5331 8586 987 • Fax: +49 (0)5331 8586 989 • E-mail: info@reliatech.de • web: www.reliatech.de
Location: Lindener Str. 15, 38300 Wolfenbüttel, Germany

Recombinant Human Soluble VEGFR-2_{D7}/Fc Chimera

Handling/Application



SDS-PAGE (10%)

Fig. 1: SDS-PAGE analysis of recombinant human soluble KDR(D7) and sKDR(D7)-Fc derived from insect cells. Samples were loaded in 10% SDS-polyacrylamide gel under reducing and non-reducing conditions and stained with Silver stain.
As you can see sKDR (D7)-Fc is able to form dimers whereas sKDR (D7) is not.

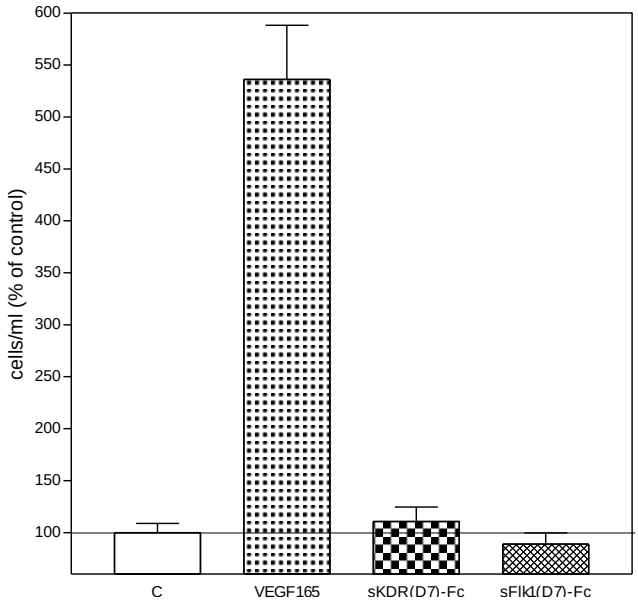


Figure 2. Inhibition of the VEGF165-induced proliferation of HUVE cells by recombinant human and mouse sKDR(D7)-Fc and sFlk-1(D7)-Fc. HUVECs were stimulated with 10 ng/ml VEGF165, both soluble receptors were added with a 100X excess.

ReliaTech GmbH
Phone: +49 (0)5331 8586 987 • Fax: +49 (0)5331 8586 989 • E-mail: info@reliatech.de • web: www.reliatech.de
Location: Lindener Str. 15, 38300 Wolfenbüttel, Germany