



# Recombinant Human Vascular Endothelial Growth Factor-C



**FOR RESEARCH ONLY! NOT FOR HUMAN USE!**

<b>Cat.-no:</b>	<b>300-079</b>
<b>Size:</b>	20 µg
<b>Lot. No.:</b>	According to product label
<b>Country of origin:</b>	Germany

## Scientific Background

<b>Gene:</b>	<i>vegfc</i>
<b>Synonyms:</b>	VRP, Flt4-L, VEGF-related protein

VEGF-C, also known as Vascular Endothelial Growth Factor Related Protein (VRP), is a recently discovered VEGF growth factor family member that is most closely related to VEGF-D. The human VEGF-C cDNA encodes a pre-pro-protein of 416 amino acids residues. It is almost identical to the mouse VEGF-C protein. Similar to VEGF-D, VEGF-C has a VEGF homology domain spanning the middle third of the precursor molecule and long N- and C-terminal extensions. In adults, VEGF-C is highly expressed in heart, placenta, ovary and small intestine. Recombinant human VEGF-C, lacking the N- and C-terminal extensions and containing only the middle VEGF homology domain, forms primarily non-covalently linked dimers. This protein is a ligand for both VEGFR-2/KDR and VEGFR-3/FLT-4. Since VEGFR-3 is strongly expressed in lymphatic endothelial cells, it has been postulated that VEGF-C is involved in the regulation of the growth and/or differentiation of lymphatic endothelium. Although recombinant human VEGF-C is also a mitogen for vascular endothelial cells, it is much less potent than VEGF-A. The recombinant human VEGF-C contains 115 amino acids residues and was fused to a His-tag (6x His) at the C-terminal end. As a result of glycosylation VEGF-C migrates as a 18-24 kDa protein in SDS-PAGE under reducing conditions.

## References

1. Joukov et al., EMBO J 15:290, 1996
2. Olofsson et al., Curr Opin Biotech 10:528, 1999
3. Kukkk et al., Development 122:3829, 1996

## Sequence

```
DPTEETIKFAAAHYNTEILKSIDNEWKRTQCMPREVCIDVGKEFGV  
ATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEITVPL  
SQGPKPVTISFANHTSCRCMSKLLHHHHHH
```

## Database References

<b>Protein RefSeq:</b>	NP_005420.1
<b>Uniprot ID:</b>	P49767
<b>mRNA RefSeq:</b>	NM_005429.2

## Product Specifications

<b>Expressed in</b>	Insect cells
<b>Purity</b>	> 90% by SDS-PAGE & silver stain
<b>Buffer</b>	Water
<b>Stabilizer</b>	BSA
<b>Formulation</b>	lyophilized
<b>Length (aa):</b>	121
<b>MW:</b>	18-24 kDa
<b>Result by N-terminal sequencing</b>	DPTEETI

**Stability:** Lyophilized samples are stable for more than six months at -20°C to -70°C. Reconstituted VEGF-C should be stored in working aliquots at -20°C. **Avoid repeated freeze-thaw cycles.**

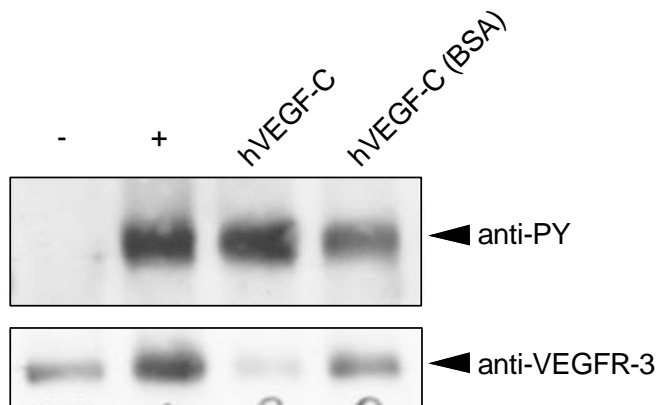
**Reconstitution:** Centrifuge the vial prior to opening! The lyophilized VEGF-C is soluble in water and most aqueous buffers. The lyophilized VEGF-C should be reconstituted in PBS or medium to a concentration not lower than 50 µg/ml.

**Biological Activity:** The biological activity was determined (i) by the ability to induce VEGFR-3/FLT-4 receptor phosphorylation in PAEC/VEGFR-3 cells and (ii) the VEGF-C-induced proliferation of primary human dermal lymphatic endothelial cells (HDLEC).

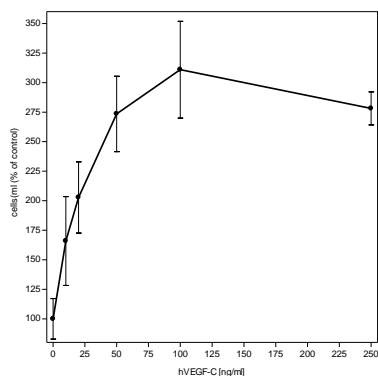


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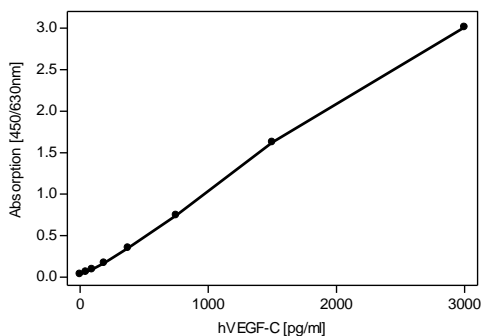
## Handling/Applications



**Fig. 1:** Measured by its ability to induce VEGFR-3/FLT-4 receptor phosphorylation in PAEC cells expressing VEGFR-3/FLT-4.



**Fig. 2:** VEGF-C-induced proliferation of HDLECs. HDLECs were stimulated with increasing amounts of recombinant human VEGF-C.



**Fig. 3:** VEGF-C Sandwich-ELISA using recombinant human VEGF-C as standard [Cat# 300-079]. Mouse anti-human VEGF-C #9/G10 (Cat# 101-M88) was used as capture antibody, Biotinylated mouse anti-human VEGF-C #107/A11 (Cat# 101-MBi89) was used for detection.