



Recombinant Rat Vascular Endothelial Growth Factor-C



FOR RESEARCH ONLY! NOT FOR HUMAN USE!

Cat.-no:	R20-014
Size:	5 µg
Lot. No.:	According to product label
Country of origin:	Germany

Scientific Background

Gene:	<i>vegfc</i>
Synonyms:	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 rat 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 rat 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 rat VEGF-C is also a mitogen for vascular endothelial cells, it is much less potent than VEGF-A. The recombinant rat VEGF-C contains 127 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 an 15-20 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. Kukuk et al., Development 122:3829, 1996

Sequence

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DTVKLAAAHYNTEILKSIDNEWKRTQCMPEVCI DVGKEFGAATNT  
FFKPPCVSVYRCGGCCNSEGLQCMNTSTGYLSKTLFEITVPLSQGP  
KPV T I S FANHTSCRCMSKLDVYRQVHS I I HHHHHH
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Database References

Protein RefSeq:	NP_446105.1
Uniprot ID:	O35757
mRNA RefSeq:	NM_053653.1

Product Specifications

Expressed in	Insect cells
Purity	> 90% by SDS-PAGE & silver stain
Buffer	50 mM acetic acid
Stabilizer	BSA
Formulation	lyophilized
Length (aa):	127
MW:	15-20 kDa
Result by N-terminal sequencing	SIDNEWKRTQ AND NEWKRTQCMPE

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.

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



AVOID REPEATED FREEZE AND THAW CYCLES!

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

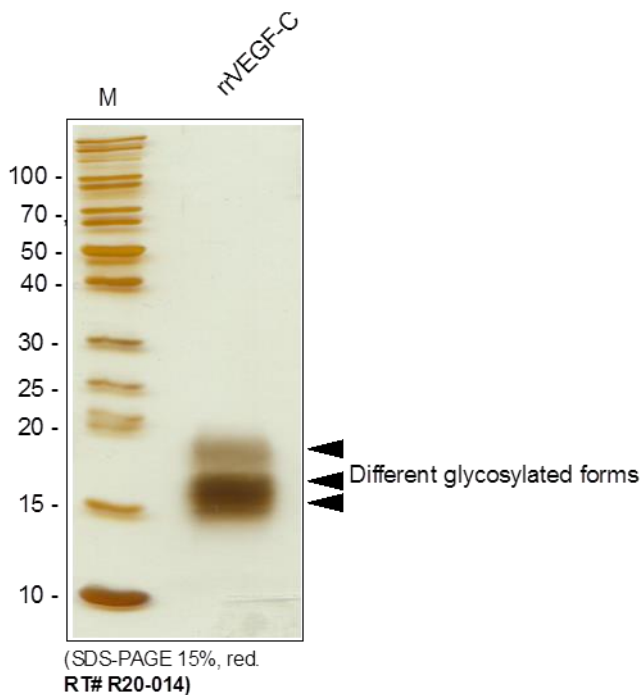


Fig. 1: SDS-PAGE analysis of recombinant rat VEGF-C. Sample was loaded in 15% SDS-polyacrylamide gel under reducing conditions and stained with Silver stain.

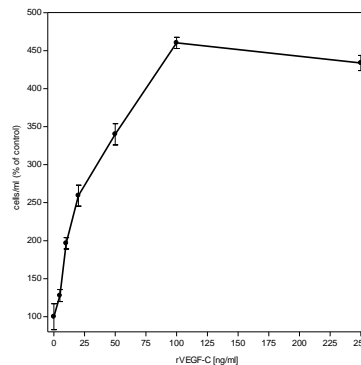


Fig. 3: VEGF-C-induced proliferation of primary human dermal lymphatic endothelial cells (HDLEC). HDLECs were stimulated with increasing amounts of recombinant rat VEGF-C.

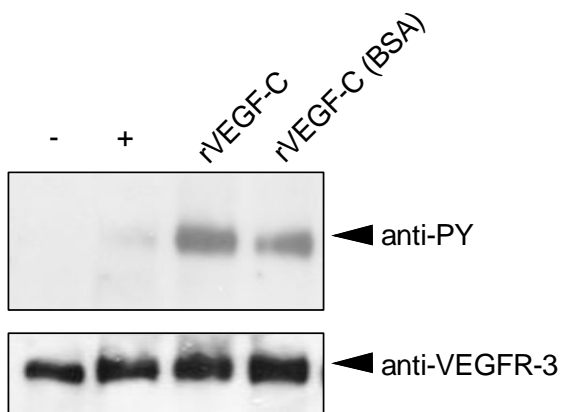


Fig. 2: Measured by its ability to induce VEGFR-3/FLT-4 receptor phosphorylation in PAEC cells expressing VEGFR-3/FLT-4.