

Recombinant Human Vascular Endothelial Growth Factor₂₀₆

ORDER INFORMATION

Name of Product:	Recombinant Human Vascular Endothelial Growth Factor ₂₀₆
Catalogue Number:	rAP-9000
Product Format:	Lyophilized
Size/Unit:	5ug

Scientific Background

Gene:	<i>vegf</i>
Synonyms:	VEGF-A, VPF

Vascular endothelial growth factor-A (VEGF-A) mRNA undergoes alternative splicing events that generate several different homodimeric isoforms, e.g. VEGF₁₂₁, VEGF₁₄₅, VEGF₁₆₅, VEGF₁₈₉, and VEGF₂₀₆. VEGF₁₂₁ is a non-heparin-binding acidic protein, which is freely diffusible. The longer forms, VEGF₁₈₉ or VEGF₂₀₆, are highly basic proteins tightly bound to extracellular heparin-containing proteoglycans. VEGF₁₆₅ has intermediate properties. VEGF₁₆₅ was observed largely in Golgi apparatus-like structures. Immunogold labeling of cells expressing VEGF₁₈₉ or VEGF₂₀₆ revealed that the staining was localized to the subepithelial ECM. VEGF associated with the ECM was bioactive, because endothelial cells cultured on ECM derived from cells expressing VEGF₁₈₉ or VEGF₂₀₆ were markedly stimulated to proliferate. In addition, ECM-bound VEGF can be released into a soluble and bioactive form by heparin or plasmin. ECM-bound VEGF₁₈₉ and VEGF₂₀₆ have molecular masses consistent with the intact polypeptides. The ECM may represent an important source of VEGF and angiogenic potential. The isoforms VEGF₁₄₅, VEGF₁₆₅ and VEGF₁₈₉ bind to heparin with high affinity, the affinity of VEGF₂₀₆ is much weaker. All dimeric forms have similar biological activities but their bioavailability is very different. However so far there are only a few data about the biological activities of VEGF₂₀₆.

References

1. Park JE et al, Mol Biol Cell 4:1317, 1993
2. Grützkau A et al, Mol Biol Cell 9:875, 1998
3. Breier et al., Dev 114:521, 1992
4. Fiebig et al., Eur J Biochem 211:19, 1993
5. Flamme et al., Dev Biol 162:699, 1995
6. Kremer et al., Cancer Res 57:3852, 1997

Sequence

APMAEGGGQNHHEVVKFMDVYQRSYCHPIETLVDFIQEYDPDEIEYIFKPSCV
 PLMRCGGCCNDEGLECVPTTEESNITMQIMRIKPHQGQHIGEMSFLQHNKCEC
 RPKKDRARQEKKSVRGKGGKQKRKRKKSRYKSWSVYVGARCCCLMPWSLPGPH
 PCGPCSERRKHLFVQDPQTCCKSCKNTDSRCKARQLELNERTCRCDKPRR

Database References

Protein RefSeq:	NP_001165095
Uniprot ID:	P15692-1
mRNA RefSeq:	NM_001171624

Product Specifications

Expressed in	E.coli
Purity	≥ 75% by SDS-PAGE & Coomassie stain
Buffer	50 mM acetic acid
Stabilizer	None
Formulation	lyophilized
Length (aa):	206
MW:	~47 kDa (Dimer)
Result by N-terminal sequencing	APMAEGG

Stability: The lyophilized protein is stable for a few weeks at room temperature, but best stored at -20°C . Reconstituted VEGF₂₀₆ should be stored in working aliquots at -20°C . Avoid repeated freeze-thaw cycles.

Reconstitution: Centrifuge the vial prior to opening! The lyophilized VEGF₂₀₆ should be reconstituted in 50mM acetic acid to a concentration not lower than 50 $\mu\text{g}/\text{ml}$. For long term storage we recommend to add at least 0.1% human or bovine serum albumin.



AVOID REPEATED FREEZE AND THAW CYCLES!

Biological Activity: The ED₅₀ for stimulation of cell proliferation in human dermal lymphatic endothelial cells (HDLEC) by VEGF₂₀₆ has been determined to be in the range of 5-15 ng/ml.



Handling/Application

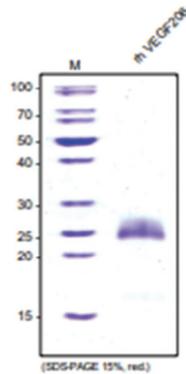


Fig. 1: SDS-PAGE analysis of recombinant human VEGF₂₀₆ produced in *E. coli*. Sample was loaded under reducing conditions in 15% SDS-polyacrylamide gel and stained with Coomassie blue.

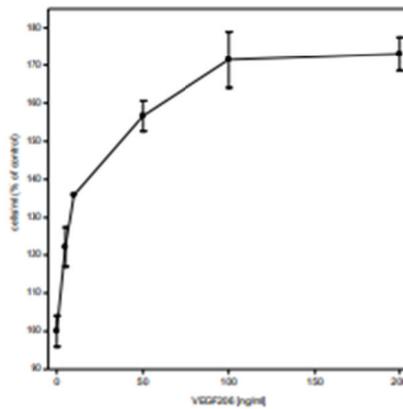


Fig. 2: VEGF₂₀₆-induced proliferation of primary human dermal lymphatic endothelial cells (HDLEC). HDLECs were stimulated with increasing amounts of human VEGF₂₀₆.

Optimal dilutions should be determined by each laboratory for each application. The listed dilutions are for recommendation only and the final conditions should be optimized by the ender users! This product is sold for Research Use Only