Recombinant Mouse Vascular Endothelial Growth Factor$_{120}$

20200723DS

FOR RESEARCH ONLY! NOT FOR HUMAN USE!

Cat.-no:	**M30-031**
Size:	5 µg
Lot. No.:	According to product label
Country of origin:	Germany

Scientific Background

Gene:	*vegf*
Synonyms:	VEGF-A, VPF

Mouse Vascular Endothelial Growth Factor$_{120}$ (VEGF$_{120}$), a 14.1 kI protein consisting of 120 amino acid residues, is produced as homodimer. VEGF$_{120}$ is a polypeptide growth factor and a member of t platelet-derived growth factor family. It is a specific mitogen for vascul endothelial cells and a strong angiogenic factor *in vivo*. Two high-affini tyrosine kinase receptors for VEGF$_{120}$ have been identified, VEGFR (FLT-1), and VEGFR-2 (Flk-1). Consistent with the endothelial ce specific action of VEGF$_{120}$, expression of both receptor genes has be found predominantly but not exclusively on endothelial cells. Expressi of VEGFR-1 was also found on human monocytes, neutrophils (PMN bovine brain pericytes and villous and extravillous trophoblasts.
In addition to its action as a mitogen it is a potent vascular permeabili factor (VPF) *in vivo* and is also a chemo attractant for monocytes a endothelial cells. At least four different proteins are generated differential splicing of the mouse VEGF gene: VEGF$_{120}$, VEGF$_1$ VEGF$_{164}$ and VEGF$_{188}$. The most abundant form is VEGF$_{164}$. Where VEGF$_{120}$, VEGF$_{144}$ and VEGF$_{164}$ are secreted proteins, VEGF$_{188}$ strongly cell-associated. In addition, the isoforms VEGF$_{164}$ and VEGF bind to heparin with high affinity.
VEGF is apparently a homodimer, but preparations of VEGF show sor heterogeneity on SDS gels depending of the secretion of different forr and the varying degrees of glycosylation. All dimeric forms posse similar biological activities. There is evidence that heterodimer molecules between the different isoforms exists and that different ce and tissues express different VEGF isoforms. A related protein of VEC is placenta growth factor (PlGF) with about 53% homology and VEGF with similar biological activities.

References

1. Breier et al., Dev 114:521, 1992
2. Fiebig et al., Eur J Biochem 211:19, 1993
3. Flamme et al., Dev Biol 162:699, 1995
4. Kremer at al., Cancer Res 57:3852, 1997

Sequence

APTTEGEQKSHEVIKFMDVYQRSYCRPIETLVDIFQEYPDEIEYIFKPSCVP
LMRCAGCCNDEALECVPTSESNITMQIMRIKPHQSQHIGEMSFLQHSRCECR
PKKDRTKPEKCDKPRR

Database References

Protein RefSeq:	NP 001020421
Uniprot ID:	Q00731
mRNA RefSeq:	NM 001025250

Product Specifications

Expressed in	E.coli
Purity	> 95% by SDS-PAGE & silver stain
Endotoxin level	< 0.1ng per µg of mouse VEGF$_{120}$
Buffer	50 mM acetic acid
Stabilizer	None
Formulation	lyophilized
Length (aa):	120
MW:	28,2 kDa
Result by N-terminal sequencing	APTTEGE

Stability: Lyophilized samples are stable for greater than six months at –20°C to –70°C. Reconstituted VEGF$_{120}$ should be stored in working aliquots at -20°C.

Reconstitution: The lyophilized VEGF$_{120}$ should be reconstituted in 50 mM acetic acid to a concentration not lower than 50 µg/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: Measured by cell proliferation of human umbilical vein endothelial cells (HUVEC) in the range of 2-20 ng/ml.

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Handling/Application

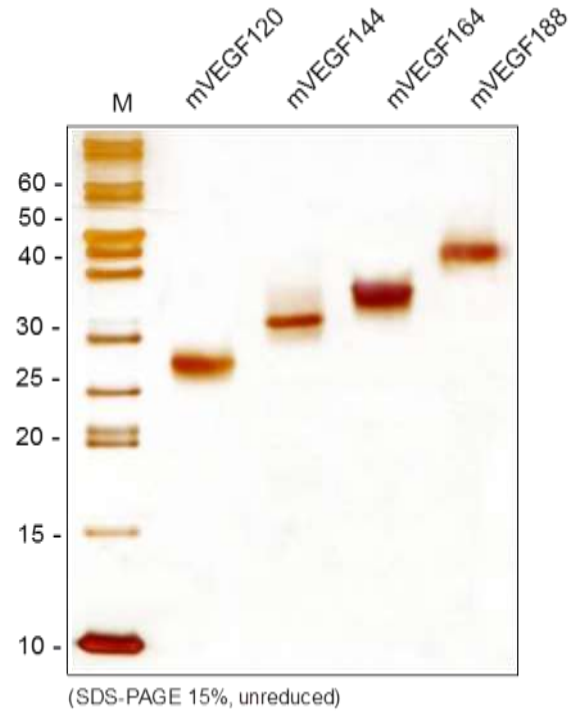

Figure 1: SDS-PAGE analysis of recombinant mouse VEGF-A isoforms produced in E. coli. Samples were loaded under non-reducing conditions in 15% SDS-polyacrylamide gel and stained with Silver stain.

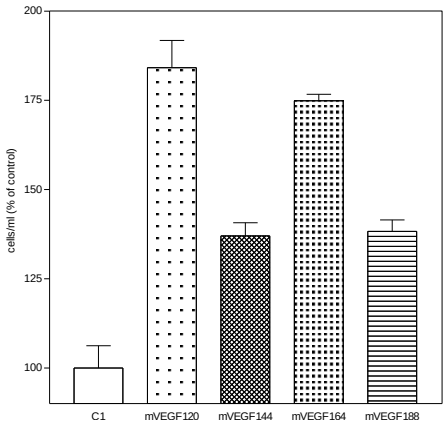

Fig. 2: Stimulation of cell proliferation in primary human umbilical vein endothelial cells (HUVEC) by recombinant moues VEGF-A isoforms. Values are the means (±SD) of triplicate determinations and expressed as percentage of control.

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