

DA3517

Recombinant ov-HB-VEGF-E (Orf virus)

Alternate names:

VEGFE, Vascular endothelial growth factor homolog Vegf-e

Quantity:

5 µg

Background:

Based on sequence similarity to VEGF-A, a gene encoding a VEGF homologue has recently been discovered in the genome of Orf virus (OV) (Lyttle et al., 1994 J. Virol 68:84-92). Different isolates of orf virus show significant amino acid sequence similarity to VEGF-A and described as a viral virulence factor that appear to be derived from captured host genes. All eight cysteine residues of the central cysteine knot motif characteristic of members of the VEGF family are conserved among other residues in the VEGF-E proteins (Dehio et al., 1999 EMBO J. 18:363-374; Wise et al., 1999 Proc. Natl. Acad. Sci USA 96:3071-3076). Alignment of all mammalian VEGF sequences indicated that VEGF-E is distinct from the previously described VEGFs but most closely related to VEGF-A. Like VEGF-A, VEGF-E was found to bind with high affinity to VEGF receptor-2 (KDR) resulting in receptor autophosphorylation, whilst in contrast to VEGF-A, VEGF-E and hb-VEGF-E can not bind to VEGF receptor-1 (Flt-1). Therefore VEGF-E is a potent angiogenic factor selectively binding to VEGF receptor-2/ KDR. Compared to human VEGF₁₆₅ this virus form has no heparin-binding domain and seems to be a freely secreted protein comparable to VEGF₁₂₁. In order to compare this form with human VEGF₁₆₅, an additional heparin-binding domain was engineered at the C-terminus to allow interaction with proteo-aminoglycans and heparan sulfate. These form is also able to interact with neuropillin-1.

Uniprot ID:

[Q9YMF3](#)

NCBI:

[10258](#)

Species:

Orf Virus

Source:

Insect cells

Format:

State: Lyophilized purified protein

Purity: >90% pure by SDS-PAGE and visualised by silver stain

Buffer System: 50 mM Acetic Acid, without stabilizer

Endotoxin Level: < 0.1 ng per µg of VEGF-E

Reconstitution: The lyophilised HB-VEGF-E is soluble in water and most aqueous buffers.

The lyophilised HB-VEGF-E should be reconstituted in PBS or medium containing at least 0.1% Human or Bovine Serum Albumin to a concentration not lower than 50 µg/ml.

Description:

A DNA sequence encoding the first 116 amino acid residue of Orf virus VEGF-E isolate D1701 (Dehio et al., 1999 EMBO J. 18:363-374; GenBank accession No. AF106020) was fused with a DNA sequence encoding to the C-terminal heparin binding domain of human VEGF₁₆₅. The chimeric protein was expressed in insect cells using a baculovirus expression system.

Biological Activity: Measured by its ability to stimulate 3H-thymidine incorporation in human macrovascular (HUVE) and microvascular (HDME) endothelial cells. The ED50 for this effect is typically 5-20 ng/ml.

Range: 1-30 ng/ml.

Molecular weight: 44 kDa

Storage:

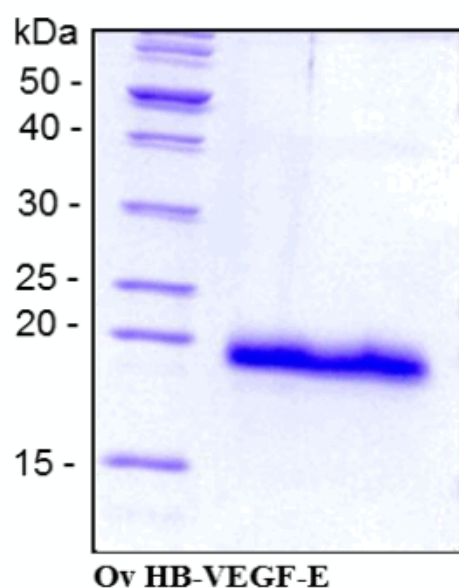
Store lyophilized at 2-8°C for 6 months or at -20°C long term.
After reconstitution store the antibody undiluted at 2-8°C for one month or (in aliquots) at -20°C long term.
Avoid repeated freezing and thawing.
Shelf life: one year from despatch.

General Readings:

1. Dehio et al., 1999 EMBO J. 18:363-374.
2. Lyttle et al., 1994 J. Virol 68:84-92.
3. Wise et al., 1999 Proc. Natl. Acad. Sci USA 96:3071-3076.
4. Heil et al., 2003 Angiogenesis 6:201-211.

Pictures:

SDS-PAGE analysis of recombinant ov-HB-VEGF-E. Sample was loaded in 15% SDS-polyacrylamide gel under reducing conditions and stained with Coomassie blue.



Stimulation of cell proliferation in primary human umbilical vein endothelial cells (HUVEC) by recombinant ov-VEGF-E and ov-HB-VEGF-E. Values are the means ($\pm$ SD) of triplicate determinations and expressed as percentage of control.

