

## Recombinant Human Vascular Endothelial Growth Factor-E Orf Virus (rh VEGF-E OV)

**Synonyms:** none

**Introduction:** 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). Different isolates of Orf virus show significant amino acid sequence similarity to VEGF-A and described as a viral virulence factor that appears 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; Wise et al., 1999). 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 can not bind to VEGF receptor-1 (Flt-1). Furthermore VEGF-E can also not bind to VEGF receptor-3 (FLT-4). Therefore VEGF-E is a potent angiogenic factor selectively binding to VEGF receptor – 2/KDR.

**Description:** A DNA sequence encoding the mature variant of ovVEGF-E isolate D1701 (Dehio et al., 1999; GenBank accession No. AF106020) was expressed in *E. coli* as a 132 amino acid residue fusion protein with an N-terminal His-tag sequence and a thrombin cleavage site. Recombinant VEGF-E homodimer was dimerized in vitro and has a predicted mass of approximately 35 kDa.

**Source:** *Escherichia Coli*

**Physical Appearance:** Sterile filtered white lyophilized (freeze-dried) powder.

**Formulation:** Lyophilized from a concentrated solution containing PBS, pH 7.4. The aliquots of 1µg and 2µg contain Trehalose 5% (w/vol) for better recovery

**Solubility:** The lyophilized VEGF-E OV is soluble in water and most aqueous buffers. The lyophilized Vascular Endothelial Growth Factor-E (Orf Virus) should be reconstituted in PBS or medium containing at least 0.1% human or bovine serum albumin to a concentration not lower than 50µg/ml.

**Stability:** Lyophilized rh VEGF-E OV although stable at room temperature for 3 weeks, should be stored desiccated below -18° C. Upon reconstitution rh VEGF-E OV should be stored at 4° C between 2-7 days and for future use below -18° C. For long term storage it is recommended to add a carrier protein (0.1% HSA or BSA). Please prevent freeze-thaw cycles.

**Purity:** greater than 90.0% by RP-HPLC and by SDS-PAGE.

**Biological Activity:** The ED50 for stimulation of 3H-thymidine incorporation and cell proliferation by human umbilical vein endothelial cells for VEGF-E Orf Virus has been determined to be in the range of 5 - 20ng/ml.

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<i>small</i>	2 µg	Cat.N°	11344722
<i>medium</i>	10 µg	Cat.N°	11344723

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