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Product datasheet for AR31064PU-L

VEGF-F / svVEGF Protein

Product data:

Product Type:	Recombinant Proteins
Description:	VEGF-F / svVEGF recombinant protein, 20 µg
Expression Host:	E. coli
Expression cDNA Clone or AA Sequence:	MGQVMPFMEV YRHSVCQTRE TLVSILEEHP DEVSHIFRPS CVTALRCGGC CTDESLKCTA TGKRSVGREI MRVDPHKGTS KTEVMQFTEH TDCECRPRSA SGVNSRKHKR NPEEGEPRAK FPFV
Predicted MW:	27.6 kDa
Purity:	>95%
Buffer:	Presentation State: Purified State: Lyophilized purified protein. Buffer System: 50 mM Acetic Acid. **Range:** 1.0-10.0 ng/ml
Bioactivity:	Biological: Determined by the dose-dependent stimulation of the proliferation of human umbilical vein endothelial cells (HUVEC) using a concentration range of 5-20 ng/ml.
Endotoxin:	< 0.1 ng/µg of svVEGF-F
Reconstitution Method:	The lyophilized svVEGF-F is soluble in water and most aqueous buffers and should be restored in PBS or medium containing at least 0.1% Human or Bovine Serum Albumin to a concentration not lower than 50 µg/ml.
Preparation:	Lyophilized purified protein.
Protein Description:	Recombinant snake venom Vascular Endothelial Growth Factor-F (svVEGF-F).
Note:	**Protein RefSeq:** AAK52102.1 **mRNA RefSeq:** AY033151.1
Storage:	Lyophilized samples are stable for greater than six months at –20°C to –70°C. Reconstituted svVEGF-F should be stored in working aliquots at -20°C. Avoid repeated freeze-thaw cycles!
Synonyms:	Snake venom vascular endothelial growth factor toxin

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Summary:

Vascular endothelial growth factor (VEGF-A) and its family proteins are crucial regulators of blood vessel formation and vascular permeability. Snake venom has recently been shown to be an exogenous source of unique VEGF (known as VEGF-F), and now, two types of VEGF-F with distinct biochemical properties have been reported. VEGF-Fs (venom type VEGFs) are highly variable in structure and function among species, in contrast to endogenous tissue-type VEGFs (VEGF-As) of snakes. Although the structures of tissue-type VEGFs are highly conserved among venomous snake species and even among all vertebrates, including humans, those of venom-type VEGFs are extensively variegated, especially in the regions around receptor-binding loops and C-terminal putative coreceptor-binding regions, indicating that highly frequent variations are located around functionally key regions of the proteins. Genetic analyses suggest that venom-type VEGF gene may have developed from a tissue-type gene and that the unique sequence of its C-terminal region was generated by an alteration in the translation frame in the corresponding exons.

The svVEGF-F was identified during the generation of abundant expressed sequence tags from the *Viperidae* snake *Bothrops insularis* venom glands. The deduced primary sequence, after complete sequencing of the longest snake venom VEGF (svVEGF) cDNA, displayed similarity with vertebrate VEGFs and with the hypotensive factor from *Vipera aspis* venom. The mature svVEGF appears to be ubiquitously distributed throughout snake venoms and was also confirmed by Northern blot studies of other related *Viperidae* species and by cDNA cloning of svVEGF from *Bothrops jararaca* pit viper. The produced recombinant protein dimerizes after refolding processes and was biologically characterized, showing ability to increase vascular permeability. These results established that svVEGF is a novel and important active toxin during the early stages of bothropic snake bite envenoming and represents a new member of the VEGF family of proteins.

Product images: