

HUMAN VEGFA PROTEIN

Cat.#: 12286

Product Name: Human VEGFA Protein

Size: 10 µg, 50 µg and 100 µg

Synonyms: MVCD1;VEGF;VPF

Target: VEGFA

UNIPROT ID: P15692

Description: Recombinant Human VEGFA Protein with C-terminal 6xHis tag

Background: This gene is a member of the PDGF/VEGF growth factor family. It encodes a heparin-binding protein, which exists as a disulfide-linked homodimer. This growth factor induces proliferation and migration of vascular endothelial cells, and is essential for both physiological and pathological angiogenesis. Disruption of this gene in mice resulted in abnormal embryonic blood vessel formation. This gene is upregulated in many known tumors and its expression is correlated with tumor stage and progression. Elevated levels of this protein are found in patients with POEMS syndrome, also known as Crow-Fukase syndrome. Allelic variants of this gene have been associated with microvascular complications of diabetes 1 (MVCD1) and atherosclerosis. Alternatively spliced transcript variants encoding different isoforms have been described. There is also evidence for alternative translation initiation from upstream non-AUG (CUG) codons resulting in additional isoforms. A recent study showed that a C-terminally extended isoform is produced by use of an alternative in-frame translation termination codon via a stop codon readthrough mechanism, and that this isoform is antiangiogenic. Expression of some isoforms derived from the AUG start codon is regulated by a small upstream open reading frame, which is located within an internal ribosome entry site. The levels of VEGF are increased during infection with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), thus promoting inflammation by facilitating recruitment of inflammatory cells, and by increasing the level of angiotensin II (Ang II), one of two products of the SARS-CoV-2 binding target, angiotensin-converting enzyme 2 (ACE2). In turn, Ang II facilitates the elevation of VEGF, thus forming a vicious cycle in the release of inflammatory cytokines.

Species/Host: HEK293

Molecular Weight: The protein has a predicted molecular mass of 14.8 kDa after removal of the signal peptide.

Molecular Characterization: VEGFA(Ala27-Lys147) 6xHis tag

Purity: The purity of the protein is greater than 95% as determined by SDS-PAGE and Coomassie blue staining.

Formulation & Reconstitution: Lyophilized from nanodisc solubilization buffer (20 mM Tris-HCl, 150 mM NaCl, pH 8.0). Normally 5% – 8% trehalose is added as protectants before lyophilization.

Storage & Shipping: Store at -20°C to -80°C for 12 months in lyophilized form. After reconstitution, if not intended for use within a month, aliquot and store at -80°C (Avoid repeated freezing and thawing). Lyophilized proteins are shipped at ambient temperature.

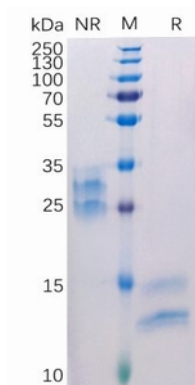


Figure 1. Human VEGFA Protein, His Tag on SDS-PAGE under non-reducing(NR) and reducing(R) conditions.

Human VEGFA, His Tagged protein ELISA

0.1 μ g of Human VEGFA, His Tagged protein per well

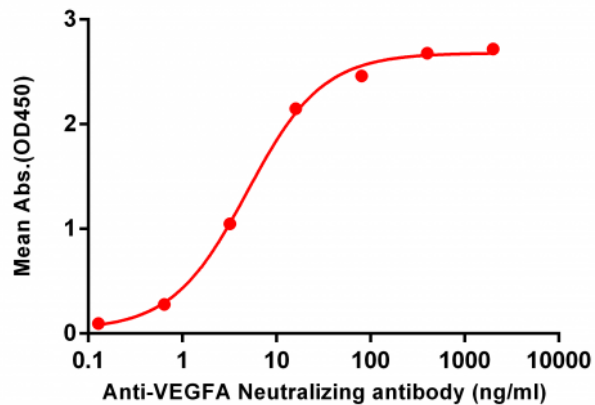


Figure 2. ELISA plate pre-coated by 1 μ g/ml (100 μ l/well) Human VEGFA, His tagged protein (12286) can bind Anti-VEGFA Neutralizing antibody 28068 in a linear range of 3.2-16 ng/ml.

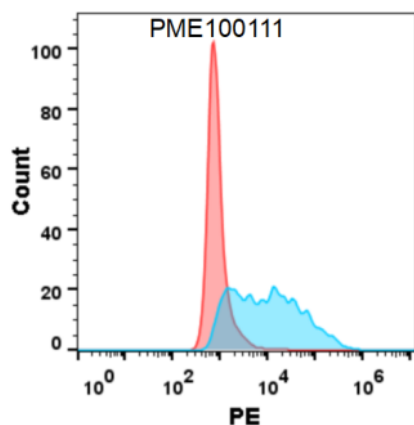


Figure 3. Flow cytometry analysis with 1 μ g/ml Human VEGFA Protein, His tag (12286) on Expi293 cells transfected with human VEGFR2 (Blue histogram) or Expi293 transfected with irrelevant protein (Red histogram).