**Product Description**

Vascular endothelial growth factor (VEGF-165) is a heparin-binding homodimeric glycoprotein involved in embryonic vasculogenesis and angiogenesis. VEGF binds to FLT1 (VEGFR-1) and KDR (VEGFR-2), and activates Raf/MEK/ERK and PI3K/AKT pathways (Ferrara et al.). VEGF exists in multiple isoforms that result from alternative splicing of VEGF mRNA in the terminal exon. Proximal splice-site selection in exon 8 results in pro-angiogenic VEGFxxx isoforms (xxx is the number of amino acids), whereas distal splice-site selection results in anti-angiogenic VEGFxxxb isoforms (Nowak et al.). It plays an important role in neurogenesis both in vitro and in vivo (Storkebaum et al.). It has neurotrophic effects on neurons of the central nervous system and promotes growth and survival of dopaminergic neurons and astrocytes. VEGF also promotes growth and survival of vascular endothelial cells, monocyte chemotaxis, and colony formation by granulocyte-macrophage progenitor cells (Ferrara et al.).

**Product Information**

- **Alternative Names:** MGC70609, MVCD-1, Vascular endothelial growth factor 2, Vascular endothelial growth factor A, Vascular permeability factor, VEGF-A, VPF
- **Accession Number:** P15692
- **Amino Acid Sequence:**
  - Mouse, Rat: P. pastoris
  - Human: APMAEGGGQN HHEVVKFMDV YQRSYCHPIE TLVDIFQEYP DEIEYIFKPS CVPLMRCGGC CNDEGLECVP TEESNITMQI MRIKPHQGQH IGEMSFLQHN KCECRPKKDR ARQENPCGPC SERRKHLFVQ DPQTCKCSCK NTDSRCKARQ LELNERTCRC DKPRR
- **Predicted Molecular Mass:** 19.1 kDa monomer; 38.2 kDa dimer
- **Species:** Human
- **Cross Reactivity:** Mouse, Rat
- **Formulation:** Lyophilized after dialysis against HEPES containing sodium chloride, pH 7.0.
- **Source:** P. pastoris

**Specifications**

- **Activity:** The specific activity is ≥ 2 x 10^5 units/mg (EC50 ≤ 5 ng/mL) as determined by a cell proliferation assay using human umbilical vein endothelial cells (HUVECs).
- **Purity:** ≥ 95%
- **Endotoxin Level:** Measured by kinetic Limulus amebocyte lysate (LAL) analysis and is ≤ 0.2 EU/μg protein.

**Preparation and Storage**

- **Storage:** Store at -80°C.
- **Stability:** Stable as supplied for 12 months from date of receipt.
- **Preparation:** Centrifuge vial before opening. Reconstitute the product in sterile water to at least 0.1 mg/mL by pipetting the solution down the sides of the vial. Do not vortex. As a general guide, do not store at 2 - 8°C for more than 1 month or at -20°C for more than 6 months. Avoid repeated freeze-thaw cycles.
(A) The biological activity of Human Recombinant VEGF-165 was tested by its ability to promote the proliferation of HUVECs. Cell proliferation was measured using a fluorometric assay method. The EC50 is defined as the effective concentration of the growth factor at which cell proliferation is at 50% of maximum. The EC50 in the above example is 1.7 ng/mL.

(B) 4 μg of Human Recombinant VEGF-165 was resolved with SDS-PAGE under reducing (+) and non-reducing (-) conditions and visualized by Coomassie Blue staining. Human Recombinant VEGF-165 is a homodimer of 19.1 kDa subunits with a predicted total molecular mass of 38.2 kDa.

Related Products

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References