Recombinant Human VEGF 206 (aa 27-232)

Catalog Number: 10490-VE

DESCRIPTION

Source	*E. coli*-derived human VEGF protein Ala27-Arg232 Accession # P15692.2
N-terminal Sequence Analysis	Ala27
Structure / Form	Disulfide-linked homodimer
Predicted Molecular Mass	24 kDa

SPECIFICATIONS

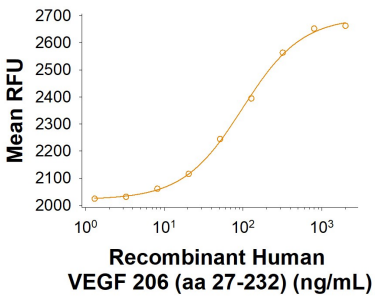
SDS-PAGE	26-30 kDa, under reducing conditions.
Activity	Measured in a cell proliferation assay using HUVEC human umbilical vein endothelial cells. The ED_{50} for this effect is 20-160 ng/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>90%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
Formulation	Lyophilized from a 0.2 µm filtered solution in HCl. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 250 µg/mL in 4 mM HCl.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 3 months, -20 to -70 °C under sterile conditions after reconstitution.

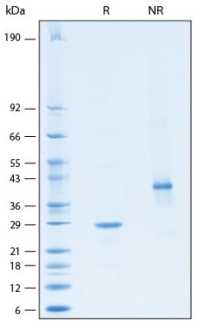
DATA

Bioactivity



Recombinant Human VEGF 206 (aa 27-232) Protein Bioactivity. Recombinant Human VEGF 206 (aa 27-232) Protein (Catalog # 10490-VE) stimulates proliferation of HUVEC human umbilical vein endothelial cells. The ED_{50} for this effect is 20-120 ng/mL.

SDS-PAGE



Recombinant Human VEGF 206 (aa 27-232) Protein SDS-PAGE. 2 µg/lane of Recombinant Human VEGF 206 (aa 27-232) Protein (Catalog # 10490-VE) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 26-30 kDa and 38-44 kDa, respectively.

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BACKGROUND

VEGF 206 (Vascular Endothelial Growth Factor-A or VEGF-A) is a 48-kDa covalently linked homodimeric protein member of the PDGF/VEGF family of molecules (1, 2). They are characterized by the presence of eight conserved cysteine residues and a cystine knot structure (3). Also known as vascular permeability factor (VPF), VEGF is a potent mediator of both angiogenesis and vasculogenesis in the fetus and adult (4). VEGF-A mRNA undergoes alternative splicing events that generate several different isoforms, e.g. VEGF 121, VEGF 145, VEGF 165, VEGF 189, and VEGF 206 in humans (5). Whereas VEGF 188/189, 164/165, and 120/121 (rat/human, respectively) are the predominant forms expressed in most tissues and cells examined, VEGF 144/145 and 205/206 are rare variants. VEGF 144/145 is detected only in placenta, uterine tissues and endometrial carcinoma cell lines while VEGF 205/206 is detected only in fetal liver, placenta and adult lung (6).VEGF 206, the longest of all isoforms in human, along with VEGF 189 are highly basic proteins that bind to heparan sulfate both on the cell surface and in the extracellular matrix (ECM) where they retains bioactivity (7). VEGF binds the type I transmembrane receptor tyrosine kinases VEGF R1 (also called Flt-1) and VEGF R2 (Flk-1/KDR) on endothelial cells (4). Although VEGF affinity is highest for binding to VEGF R1, VEGF R2 appears to be the primary mediator of VEGF angiogenic activity (3, 4). VEGF is required during embryogenesis to regulate the proliferation, migration, and survival of endothelial cells (3, 4). In adults, VEGF functions mainly in wound healing and the female reproductive cycle (3). Pathologically, it is involved in tumor angiogenesis and vascular leakage (8, 9). Circulating VEGF levels correlate with disease activity in autoimmune diseases such as rheumatoid arthritis, multiple sclerosis and systemic lupus erythematosus (10). VEGF is induced by hypoxia and cytokines such as IL-1, IL-6, IL-8, oncostatin M and TNF-alpha (3, 4, 11).

References:

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