

DESCRIPTION

Source Chinese Hamster Ovary cell line, CHO-derived human VEGF protein
Ala27-Arg215
Accession # AAA36804

N-terminal Sequence Analysis Ala27

Structure / Form Disulfide-linked homodimer

Predicted Molecular Mass 22 kDa (monomer)

SPECIFICATIONS

SDS-PAGE 22-30 kDa, reducing conditions

Activity Measured in a cell proliferation assay using HUVEC human umbilical vein endothelial cells.
The ED₅₀ for this effect is 4-40 ng/mL.

Endotoxin Level <0.10 EU per 1 µg of the protein by the LAL method.

Purity >95%, by SDS-PAGE with silver staining.

Formulation Lyophilized from a 0.2 µm filtered solution in HCl. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution Reconstitute at 500 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.

BACKGROUND

VEGF₁₈₉ (Vascular Endothelial Growth Factor-A of 189 amino acids) is a 50-52 kDa homodimeric glycoprotein member of the PDGF/VEGF family of molecules (1, 2). A large number of human VEGF isoforms are generated by alternative splicing, including VEGF₁₈₉ which lacks amino acids (aa) 166-182 of the full length protein (VEGF₂₀₆) (3-5). Mature human VEGF₁₈₉ shares 88% aa sequence identity with mouse VEGF₁₈₈. VEGF₁₈₉ binds to heparan sulfate both on the cell surface and in the extracellular matrix (ECM) where it retains bioactivity (6, 7). It can undergo proteolytic cleavage from the ECM (at Arg136-Ala137), creating a soluble fragment with increased bioactivity (6, 7). VEGF₁₈₉ is widely expressed including by vascular smooth muscle cells (3), chondrocytes (8), fibroblasts (9), neuronal and glial cells (10), and neutrophils (11). VEGF₁₈₉ interacts with various receptors including VEGF R1, VEGF R2, Neuropilin-1, and Integrins αVβ3, αVβ5, α3β1, and α5β1 (6, 12-14). VEGF₁₈₉ exerts complex effects in angiogenesis. It is proapoptotic towards quiescent vascular endothelium but is proangiogenic towards endothelium that has committed to the angiogenic process (6, 14). In particular, venous endothelial cells are highly responsive towards VEGF₁₈₉, while the responsiveness of arterial endothelium is primarily restricted to the regulation of migration (7). In addition to its vascular effects, immobilized VEGF₁₈₉ serves as an anchor for cells expressing Integrin αVβ3, and it acts as both a chemotactic and chemokinetic factor for migrating neutrophils (11, 13, 14).

References:

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