

DESCRIPTION

Source *E. coli*-derived human VEGF protein
Ala27-Arg131, followed by SLTRKD (B isoform, Reference 7)
Accession # P15692-1

N-terminal Sequence Analysis Pro28

Structure / Form Disulfide-linked homodimer

Predicted Molecular Mass 13 kDa

SPECIFICATIONS

SDS-PAGE 12 kDa, reducing conditions

Activity Measured by its binding ability in a functional ELISA.
When Recombinant Human VEGF R2/KDR Fc Chimera (Catalog # 357-KD) is immobilized at 2 µg/mL (100 µL/well), Recombinant Human VEGF 111b binds with an ED₅₀ of 12-72 ng/mL.

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

Purity >95%, 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 500 µg/mL in 4 mM HCl.

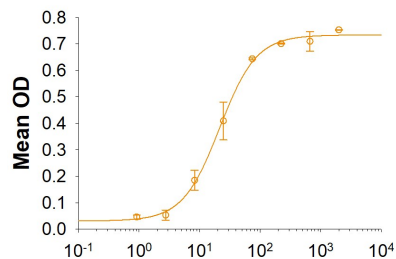
Shipping The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.

Stability & Storage

- 12 months from date of receipt, ≤ -20 °C as supplied.
- 1 month, 2 to 8 °C under sterile conditions after reconstitution.
- 3 months, ≤ -20 °C under sterile conditions after reconstitution.

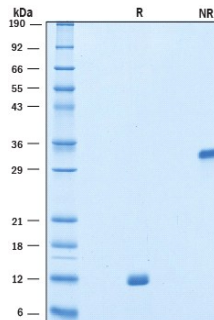
DATA

Binding Activity



When Recombinant Human VEGF R2/KDR Fc Chimera (Catalog # 357-KD) is immobilized at 2 µg/mL, Recombinant Human VEGF111b (Catalog # 10036-VE) binds with an ED₅₀ of 12-72 ng/mL.

SDS-PAGE



2 µg/lane of Recombinant Human VEGF 111b was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 12 kDa and 33 kDa, respectively.

BACKGROUND

Vascular Endothelial Growth Factor (VEGF or VEGF-A), also known as Vascular Permeability Factor (VPF), is a potent mediator of both angiogenesis and vasculogenesis in the fetus and adult (1-3). It is a member of the PDGF family that is characterized by the presence of eight conserved cysteine residues and a cystine knot structure (4). Two families of VEGF isoforms are produced through alternative splicing: VEGF xxx (pro-angiogenic) and VEGF xxxb (anti-angiogenic) families that differ by only six amino-acids at the C-terminal end. The B isoform ends with SLTRKD instead of CDKPRR (5). The first verified and widely reported VEGF xxxb family member is VEGF 165b (6). VEGF 111b is a newly discovered member that is induced by UV-B irradiation or by mitomycin C. It doesn't express in normal conditions and has a remarkable resistance to proteolysis (6). Human VEGF 111b shares 87% aa sequence identity with corresponding regions of mouse and rat VEGF. VEGF 111b contains binding domains for VEGF R1 and VEGF R2, however it lacks binding sites for NRP-1 and heparin and cleavage sites for plasmin and matrix metalloproteinases (7, 8). VEGF 111b has been shown to inhibit the proliferation of HUVECs and ovarian cancer cells as well as migration and tube formation of HUVECs (6-7). It has been demonstrated that VEGF 111b functions through VEGF R2 to inhibit the downstream PI3K, Akt, and ERK1/2 signaling pathways (6, 7).

References:

1. Leung, D.W. *et al.* (1989) *Science* **246**:1306.
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3. Byrne, A.M. *et al.* (2005) *J. Cell. Mol. Med.* **9**:777.
4. Robinson, C.J. and Stringer, S.E. (2001) *J. Cell. Sci.* **114**:853.
5. Nowak, D.G. *et al.* (2008) *J. Cell Sci.* **121**:3487.
6. Li, X. *et al.* (2015). *J. Transl. Med.* **13**:164.
7. Gu, F. *et al.* (2013) *Biochem Biophys Res Commun.* **441**:18.
8. Dehghanian, F. and Hojati, Z. (2014) *Gene* **553**:57.