TECHNICAL DATA SHEET

Recombinant Human VEGF-165 (Carrier-free)

Catalog Number: 21-8559

RPx-Pro™ Recombinant Protein
PRODUCT INFORMATION

CONTENTS
Recombinant Human VEGF-165 (Carrier-free)

DESCRIPTION
VEGFs are a family of molecules that are key drivers of vascularization and angiogenic processes. VEGFs induce proliferation and homeostasis of endothelial cells. VEGFs have been studied as indicators of both normal and pathogenic angiogenesis particularly involving tumor cells. Overexpression of VEGF in tumor cells allows tumor growth and enhanced metastatic potential. VEGF family members stimulate cellular responses by binding to VEGF receptors that include fms-like tyrosine kinase (flt-1), KDR gene product (the Mouse homolog of KDR is the flk-1 gene product), and the flt4 gene product. Splicing of the exon 6 or exon 7 mRNA from the 8 exon VEGF gene results in the different amino acid number and variants in humans and mice accounting for $VEGF_{121}$, $VEGF_{165}$ and others (one amino acid less in mouse analogs). These variants differ in their binding to heparin sulfate proteoglycans and neuropilin co-receptors imparting differential binding and activation through VEGFRs and variant specific angiogenic or anti-angiogenic functions. VEGFs and VEGFRs are targets for therapeutic intervention.

MOLECULAR MASS
$VEGF_{165}$ is a 38.2 kDa protein consisting of two 165 amino acid polypeptide chains.

AMINO ACID SEQUENCE
APMAEGGGQN HHEVVKFMDV YQRSYCHPIE TLVDIFQEYP DEIEYIFKPS CVPLMRCGGC CNDEGLECVP TEESNITMQI MRIKPHQGQH IGEMSFLQHN KCECRPKKDR ARQENPCGPC SERRKHLFVQ DPQTCKCSCK NTDSRCKARQ LELNERTCRC DKPRR

SOURCE	APPLICATIONS	PURITY	STORAGE
E. Coli	Bioassay	98 %	-20°C

PROTEIN CONTENT
Content Verified by UV Spectroscopy and/or SDS-PAGE

ENDOTOXIN LEVEL
Endotoxin level is <0.1 ng/µg of protein (<1 EU/µg).

AUTHENTICITY
Verified by N-terminal and Mass Spectrometry analyses (when applicable).

CROSS REACTIVITY
Cow, Guinea Pig, Hamster, Mouse, Pig, Rabbit, Rat, Sheep, Trout, Chicken, Leech, Zebra Fish Embryo

BIOACTIVITY
Determined by the dose-dependent stimulation of the proliferation of human umbilical vein endothelial cells (HUVEC) using a concentration range of 0.2-0.4 ng/ml.

RESEARCH AREAS
Angiogenesis/Cardiovascular; Cancer; Inflammation; Proliferation

RECONSTITUTION
See Certificate of Analysis (COA) for lot specific reconstitution information.

REFERENCES
Karkkainen M and TV Petrova 2000 Oncogene 19: 5598–5605.Shin YJ, JS Choi, et al. 2010 J Neuroimmunol 229: 81-90. Holmes K, OL Roberts, AM Thomas and MJ Cross 2007 Cell Signal 19: 2003–2012.Bergers G and D Hanahan 2008 Nat Rev Cancer 8: 592–603.Paez-Ribes M, E Allen, JHudock, T Takeda, H Okuyama, F Vinals , M Inoue, G Bergers, D Hanahan and O Casanovas Cancer Cell 15: 220–231.Ebos J, CR Lee, W Cruz-Munoz, GA Bjarnason, JG Christensen and RS Kerbel 2009 Cancer Cell 15: 232–239.