SANTA CRUZ BIOTECHNOLOGY, INC.

VEGF (hBA-165): sc-4570

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The onset of angiogenesis is believed to be an early event in tumorigenesis and may facilitate tumor progression and metastasis. Several growth factors with angiogenic activity have been described. These include fibroblast growth factors (FGFs), platelet derived growth factor (PDGF) and vascular endothelial growth factor (VEGF). VEGF is a dimeric glycoprotein with structural homology to PDGF. Several variants of VEGF have been described that arise by alternative mRNA splicing. It has been speculated that VEGF may function as a tumor angiogenesis factor *in vivo* because the expression pattern of VEGF is consistent with a role in embryonic angiogenesis. VEGF mRNA is formed in some primary tumors, VEGF is produced by tumor cell lines *in vitro* and VEGF mitogenic activity appears to be restricted to endothelial cells. A member of the PDGF receptor family, Flt, has been identified as a high-affinity receptor for VEGF.

REFERENCES

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2. Conn, G., et al. 1990. Purification of a glycoprotein vascular endothelial cell mitogen from a rat glioma-derived cell line. Proc. Natl. Acad. Sci. USA 87: 1323-1327.
3. Ferrara, N., et al. 1991. The vascular endothelial growth factor family of polypeptides. J. Cell. Biochem. 47: 211-218.
4. Tischer, E., et al. 1991. The human gene for vascular endothelial growth factor. Multiple protein forms are encoded through alternative exon splicing. J. Biol. Chem. 266: 11947-11954.
5. Plate, K.H., et al. 1992. Vascular endothelial growth factor is a potential tumour angiogenesis factor in human gliomas *in vivo*. Nature 359: 845-848.
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7. Berse, B., et al. 1992. Vascular permeability factor (vascular endothelial growth factor) gene is expressed differentially in normal tissues, macrophages and tumors. Mol. Biol. Cell 3: 211-220.
8. De Vries, C., et al. 1992. The Fms-like tyrosine kinase, a receptor for vascular endothelial growth factor. Science 255: 989-991.

SOURCE

VEGF (hBA-165) is produced in *E. coli* as 40 kDa biologically active, GST-tagged fusion protein corresponding to amino acids 27-214 (deletion at 141-208) of VEGF splice variant of human origin.

PRODUCT

VEGF (hBA-165) is purified from bacterial lysates (> 98%); supplied as 50 µg purified protein.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

BIOLOGICAL ACTIVITY

VEGF (hBA-165) is biologically active as determined by its mitogenic activity on human dermal microvascular endothelial cells using a concentration range of 1-100 ng/ml.

RECONSTITUTION

In order to avoid freeze/thaw damaging of the active protein, dilute protein when first used to desired working concentration. Either a sterile filtered standard buffer (such as 50mM TRIS or 1X PBS) or water can be used for the dilution. Store any thawed aliquot in refrigeration at 2° C to 8° C for up to four weeks, and any frozen aliquot at -20° C to -80° C for up to one year. It is recommended that frozen aliquots be given an amount of standard cryopreservative (such as Ethylene Glycol or Glycerol 5-20% v/v), and refrigerated samples be given an amount of carrier protein (such as heat inactivated FBS or BSA to 0.1% v/v) or non-ionic detergent (such as Triton X-100 or Tween 20 to 0.005% v/v), to aid stability during storage.

SELECT PRODUCT CITATIONS

1. Celik-Ozenci, C., et al. 2003. Localization of vascular endothelial growth factor in the zona pellucida of developing ovarian follicles in the rat: a possible role in destiny of follicles. Histochem. Cell Biol. 120: 383-390.
2. Abe, R., et al. 2004. Overexpression of pigment epithelium-derived factor decreases angiogenesis and inhibits the growth of human malignant melanoma cells *in vivo*. Am. J. Pathol. 164: 1225-1232.
3. Chen, J., et al. 2006. Using anti-VEGF McAb and magnetic nanoparticles as double-targeting vector for the radioimmunotherapy of liver cancer. Cancer Lett. 231: 169-175.
4. Amirkhosravi, A., et al. 2011. Assessing the role of platelet activation in bevacizumab associated thrombosis. Swiss Med. Wkly. 141: w13278.
5. Qu, S., et al. 2018. Presence of the minor allele of microRNA205 rs3842530 polymorphism increases 18FDG uptake in patients with breast cancer via targeting VEGF. Mol. Med. Rep. 17: 636-642.
6. Xian, Z., et al. 2020. Imperatorin alleviates Ros-mediated airway remodeling by targeting the Nrf2/HO-1 signaling pathway. Biosci. Biotechnol. Biochem. 84: 898-910.
7. Zhang, Y., et al. 2020. M2 macrophage-derived extracellular vesicles promote gastric cancer progression via a microRNA-130b-3p/MLL3/GRHL2 signaling cascade. J. Exp. Clin. Cancer Res. 39: 134.

STORAGE

Store desiccated at -20° C; stable for one year from the date of shipment.

RESEARCH USE

For research use only, not for use in diagnostic procedures.