

BACKGROUND

Vascular endothelial growth factor (VEGF, also designated as VEGF-A) is the founding member of a family of homodimeric glycoproteins that are structurally related to the platelet-derived growth factors (PDGF); this family also includes placenta growth factor (PlGF), VEGF-B, VEGF-C, VEGF-D and VEGF-E. This VEGF family of proteins binds selectively with different affinities to at least five distinct receptors. Three of them belong to the superfamily of receptor tyrosine kinases and are termed VEGF receptor-1 (VEGFR-1), also called Flt-1 (fms-like tyrosine kinase 1), VEGFR-2, also called KDR (kinase insert-domain containing receptor) in humans, and Flk-1 (fetal liver kinase 1) in rodents, respectively, as well as VEGFR-3, also called Flt-4. The fourth and fifth receptors are neuropilin-1 and neuropilin-2.¹

VEGF is a highly specific mitogen for vascular endothelial cells. Five VEGF isoforms of 121, 145, 165, 189 and 206 amino acids (VEGF121-206) are generated as a result of alternative splicing from a single VEGF gene. These isoforms differ in their molecular mass and in biological properties such as their ability to bind to cell-surface heparan-sulfate proteoglycans. The expression of VEGF is potentiated in response to hypoxia, by activated oncogenes, and by a variety of cytokines. VEGF induces endothelial cell proliferation, promotes cell migration, and inhibits apoptosis. *In vivo* VEGF induces angiogenesis as well as permeabilization of blood vessels, and plays a central role in the regulation of vasculogenesis.² Deregulated VEGF expression contributes to the development of solid tumors by promoting tumor angiogenesis and to the etiology of several additional diseases that are characterized by abnormal angiogenesis. Consequently, inhibition of VEGF signaling abrogates the development of a wide variety of tumors.³

References:

1. Kurebayashi J et al.: Jpn J Cancer Res. 90:977-81, 1999.
2. Shinkaruk S et al.: Curr Med Chem Anticancer Agents. 3:95-117, 2003.
3. Rini BI: Oncologist 10:191-197,2005.

TECHNICAL INFORMATION

Source:

VEGF Antibody is a mouse monoclonal antibody raised against recombinant human VEGF expressed in CHO cells.

Specificity and Sensitivity:

This antibody detects endogenous levels of VEGF proteins.

Storage Buffer: PBS and 30% glycerol

Storage:

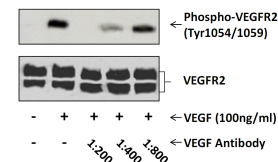
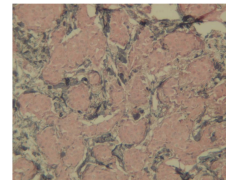
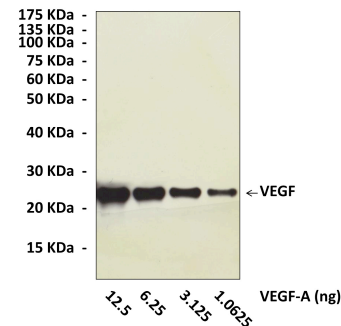
Store at -20°C for at least one year. Store at 4°C for frequent use. Avoid repeated freeze-thaw cycles.

APPLICATIONS

Application:	*Dilution:
WB	1:1000
IP	1:50-200
IHC (Paraffin)	1:50-200
Neutralization	1:50-1000
FACS & ICC	n/d

**Optimal dilutions must be determined by end user.*

QUALITY CONTROL DATA



Top: Western Blot detection of various amounts of recombinant human VEGF proteins using VEGF antibody. **Middle:** This antibody stains paraffin-embedded human breast cancer tissue in immunohistochemical analysis. **Bottom:** This antibody also neutralizes VEGF activity in stimulation of VEGFR2 activation and phosphorylation in HUVEC cells (Cat# 201-75n). VEGF was preincubated with various fold dilutions of VEGF Antibody at 37° C for 30 minutes, and then was added into a HUVEC culture for 5 minutes. The phosphorylation of VEGFR2 was detected by using Phospho-VEGFR2 (Tyr1054/1059) antibody (Cat# CC1027). VEGFR2 amounts were detected by using VEGFR2 Antibody (#CC1020).

