

Background

Vascular endothelial growth factor receptor-2 (VEGFR-2/Flk-1/KDR) is the primary receptor for VEGF in endothelial cells. Other VEGFR family members, VEGFR-1 (Flt-1) and VEGFR-3 (Flt-4), can also transduce the intracellular signals of VEGF. However, the role of VEGFR-1 is observed mainly during embryonic angiogenesis and VEGFR-3 signaling may be restricted to specific types of endothelial cells. Major autophosphorylation sites of VEGFR-2 are located in the kinase insert domain (Tyr-951/996) and in the tyrosine kinase catalytic domain (Tyr-1054/1059). Other sites, Tyr-1175 and Tyr-1212 provide docking sites for downstream signaling molecules. Activation of VEGFR-2 also phosphorylates Tyr-801, leading to PI3-kinase-Akt activation and increases in endothelial nitric oxide synthase activity. Phosphorylation of multiple sites in VEGFR-2 is required for downstream activation of several signaling pathways that control proliferation, chemotaxis, and sprouting during angiogenesis.

Background References

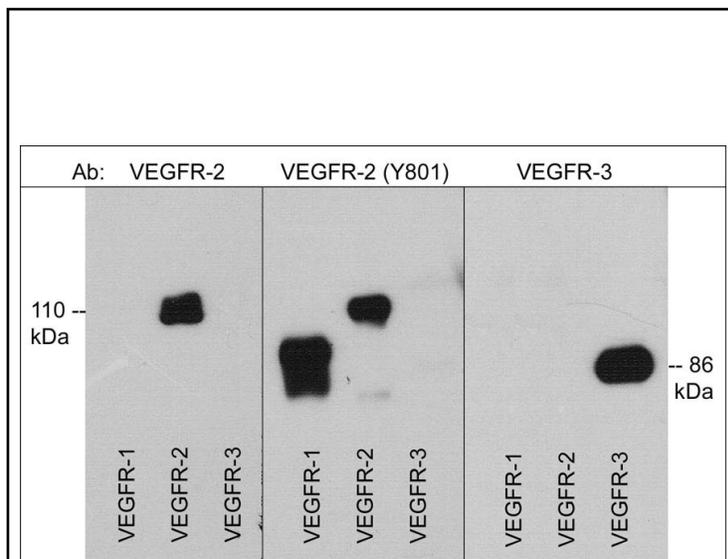
Dougher-Vermazen, M. et al. (1994) *Bioch Biophys Res Com.*
 Meyer, M. et al. (1999) *EMBO J.* 18:363.
 Robinson, C.J. & Stringer, S.E. (2001) *J. Cell Sci.* 114:853.
 Garcia Blanes, M. et al. (2007) *J Biol. Chem.* 282(14):10660.

Product Citations

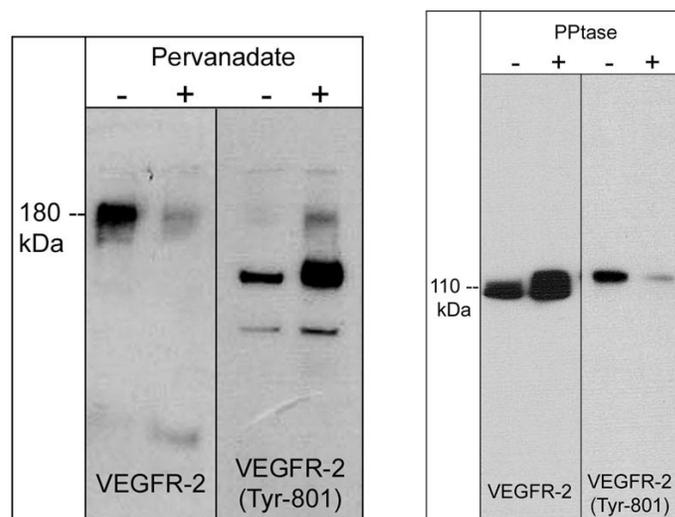
Baek, M. et al. (2018) *Cell Death Dis.* 9(7):730.
WB: mouse keratinocytes

Chen, P. et al. (2014) *Proc Natl Acad Sci.* 111(15):5514
WB: HUVEC cells

Chen, T.T. et al. (2010) *J Cell Biol.* 188(4):595.
WB: HUVECs + VEGF



Western blot image of GST-recombinant human VEGFR-1 (89 kDa), VEGFR-2 (110 kDa), and VEGFR-3 (86 kDa) C-terminal regions. The blots were probed with rabbit polyclonal anti-VEGFR-2 (a.a. 1304-1317), anti-VEGFR-2 (Tyr-801, conserved site), and anti-VEGFR-3 (a. a. 1285-1298).



Left: Western blot image of HUVEC cells untreated (-) or treated with pervanadate (1 mM) for 30 min. (+). Right: Western blot image of GST-recombinant VEGFR-2 kinase without (-) or with (+) alkaline phosphatase treatment. Both sets of blots were probed with rabbit polyclonal anti-VEGFR-2 (a.a. 1304-1317) or anti-VEGFR-2 (Tyr-801).

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VEGFR-2 (Tyr-801)[conserved site], phospho-specific

Rabbit Polyclonal

Cat. # VP2921

Size 100 µl

Immunogen

Uniprot ID: P35968

Phospho-VEGFR-2 (Tyr-801) peptide (coupled to carrier protein) corresponding to amino acids surrounding Tyr-801 in human VEGFR-2. This sequence has high homology to the conserved site in rat and mouse VEGFR-2, and has significant homology to the conserved sites in VEGFR-1 (Tyr-794) and VEGFR-3 (Tyr-812).

Buffer and Storage

Rabbit polyclonal, affinity-purified antibody is supplied in 100µl phosphate-buffered saline, 50% glycerol, 1 mg/ml BSA, and 0.05% sodium azide. Store at -20°C. Stable for 1 year.

Applications

| | |
|-------|--------|
| WB | 1:1000 |
| ELISA | 1:2000 |
| ICC | 1:100 |

Species Reactivity

Hu, Rt, Ms

End user should determine optimal dilution for their particular applications and experiments.

Western blot membranes were incubated with diluted antibody in 5% non-fat milk, Tris buffer, 0.04% Tween20 for 1 hour at room temperature.

Abbreviations: E = ELISA, ICC = immunocytochemistry, IHC = immunohistochemistry, IP = immunoprecipitation, MS = mass spectrometry, WB = western blot
Hu = Human, Ms = Mouse, Rt = Rat, Ck = Chicken, F = Frog, B = Bovine

Specificity

This antibody was affinity purified with phospho-VEGFR-2 (Tyr-801) peptide. The purified antibody detects a 180 kDa* band corresponding to VEGFR-2 in western blots of human endothelial cells treated with pervanadate, and shows strong reactivity toward recombinant human VEGFR-2. This reactivity is removed by alkaline phosphatase treatment. In addition, the antibody detects the conserved site in VEGFR-1 (Tyr-794). The antibody also works for immunofluorescent staining of VEGFR-2 in HUVEC cells.

*All molecular weights (MW) are confirmed by comparison to MW standards and to western blot mobilities of known proteins with similar MW.

"Native" western blot utilizes non-reducing sample buffer (no mercaptoethanol or SDS), normal SDS-PAGE gel electrophoresis, and no methanol in transfer buffers.

Related Products

VP2871 VEGFR-2 (a.a.1304-1317) Rabbit Polyclonal

VP2941 VEGFR-3 (a.a.1285-1298) Rabbit Polyclonal

EM1991 EGFR (Tyr-1101), phospho-specific Mouse Monoclonal

EP1871 EGFR (a.a. 961-972) Rabbit Polyclonal

EP1911 EGFR (Ser-967), phospho-specific Rabbit Polyclonal

EP1931 EGFR (Ser-1142), phospho-specific Rabbit Polyclonal

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