

PRODUCT INFORMATION

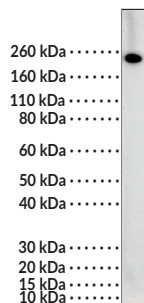
VEGFR2 Rabbit Monoclonal Antibody (Clone RM515)

Item No. 42781

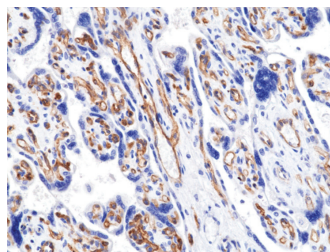
Overview and Properties

Contents:	This vial contains 100 µl of protein A-affinity purified monoclonal antibody.
Synonyms:	CD309, Fetal Liver Kinase 1, FLK1, KDR, Kinase Insert Domain Receptor, Vascular Endothelial Growth Factor Receptor 2
Immunogen:	A peptide corresponding to residues near the C-terminus of human VEGFR2
Cross Reactivity:	(+) VEGFR2
Species Reactivity:	(+) Human
Form:	Liquid
Storage:	-20°C (as supplied)
Stability:	≥1 year
Storage Buffer:	PBS with 50% glycerol, 1% BSA, and 0.09% sodium azide
Clone:	RM515
Host:	Rabbit
Isotype:	IgG
Applications:	Immunohistochemistry (IHC) and Western blot (WB); the recommended starting dilution is 1:100-1:200 for IHC and 1:500-1:1,000 for WB. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

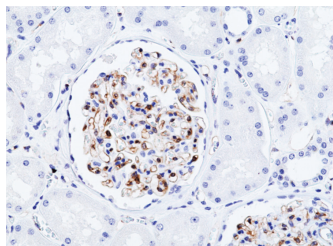
Images



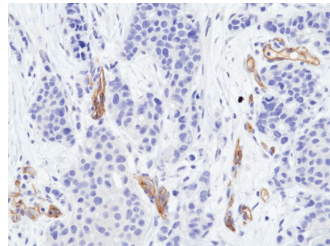
WB of human placenta lysates, using VEGFR2 Rabbit Monoclonal Antibody (Clone RM515) at a dilution of 1:500.



Immunohistochemical staining of formalin-fixed and paraffin-embedded human normal placenta tissue using VEGFR2 Rabbit Monoclonal Antibody (Clone RM515) at a dilution of 1:100 for one hour at room temperature.



Immunohistochemical staining of formalin-fixed and paraffin-embedded human normal kidney tissue using VEGFR2 Rabbit Monoclonal Antibody (Clone RM515) at a dilution of 1:100 for one hour at room temperature.



Immunohistochemical staining of formalin-fixed and paraffin-embedded human breast cancer tissue using VEGFR2 Rabbit Monoclonal Antibody (Clone RM515) at a dilution of 1:100 for one hour at room temperature.

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

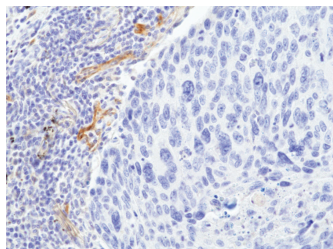
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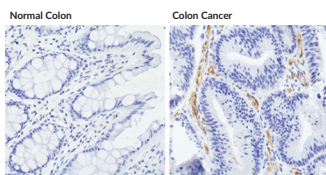
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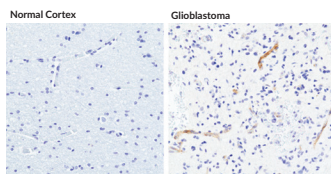
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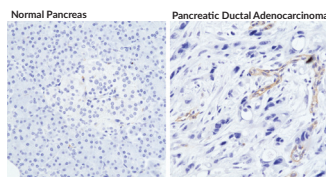
Immunohistochemical staining of formalin-fixed and paraffin-embedded human lung cancer tissue using VEGFR2 Rabbit Monoclonal Antibody (Clone RM515) at a dilution of 1:100 for one hour at room temperature.



Immunohistochemical staining of formalin-fixed and paraffin-embedded human normal colon and colon cancer tissue using VEGFR2 Rabbit Monoclonal Antibody (Clone RM515) at a dilution of 1:100 for one hour at room temperature.



Immunohistochemical staining of formalin-fixed and paraffin-embedded human brain and glioblastoma tissue using VEGFR2 Rabbit Monoclonal Antibody (Clone RM515) at a dilution of 1:100 for one hour at room temperature.



Immunohistochemical staining of formalin-fixed and paraffin-embedded human pancreas and pancreatic ductal adenocarcinoma tissue using VEGFR2 Rabbit Monoclonal Antibody (Clone RM515) at a dilution of 1:100 for one hour at room temperature.

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Description

VEGFR2, also known as kinase insert domain receptor (KDR), is a receptor tyrosine kinase that has roles in vascular permeability, cell proliferation and survival, and angiogenesis.¹ It is composed of an N-terminal extracellular ligand-binding domain, which contains seven immunoglobulin-like (Ig-like) domains, a transmembrane domain, and an intracellular tyrosine kinase domain, which is subject to phosphorylation and contains a kinase insert domain and the C-terminal domain.^{1,2} VEGFR2 is expressed primarily in vascular and lymphatic endothelial cells, where it is bound by the growth factors VEGF-A, VEGF-C, and VEGF-D.¹ Upon ligand binding, VEGFR2 forms homodimers or heterodimers with VEGFR1 or VEGFR3, resulting in VEGFR2 phosphorylation and activation of a variety of intracellular signaling pathways, including the ERK/MAPK pathway, to promote endothelial cell survival, proliferation, and migration. VEGFR2 also exists in a soluble form that is generated by alternative splicing of the KDR pre-mRNA or proteolytic shedding and decreases angiogenesis by functioning as a decoy receptor for VEGF-A.^{3,4} VEGFR2 expression is increased in the tumor vasculature of patients with a variety of solid tumors, including colorectal, lung, pancreatic, and breast cancer.⁵ Cayman's VEGFR2 Rabbit Monoclonal Antibody (Clone RM515) can be used for immunohistochemistry (IHC) and Western blot (WB) applications.

References

1. Koch, S. and Claesson-Welsh, L. Signal transduction by vascular endothelial growth factor receptors. *Cold Spring Harb. Perspect. Med.* **2**(7), a006502 (2012).
2. Park, S.A., Jeon, M.S., Ha, K.-T., *et al.* Structure and function of vascular endothelial growth factor and its receptor system. *BMB Rep.* **51**(2), 73-78 (2018).
3. Bowler, E. and Oltean, S. Alternative splicing in angiogenesis. *Int. J. Mol. Sci.* **20**(9), 2067 (2019).
4. Stevens, M. and Oltean, S. Modulation of receptor tyrosine kinase activity through alternative splicing of ligands and receptors in the VEGF-A/VEGFR axis. *Cells* **8**(4), 288 (2019).
5. Smith, N.R., Baker, D., James, N.H., *et al.* Vascular endothelial growth factor receptors VEGFR-2 and VEGFR-3 are localized primarily to the vasculature in human primary solid cancers. *Clin. Cancer Res.* **16**(14), 3548-3561 (2010).

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