Product Datasheet

VEGF Antibody (VG1) - BSA Free
NB100-664

Unit Size: 0.1 mg

Store at 4C short term. Aliquot and store at -20C long term. Avoid freeze-thaw cycles.

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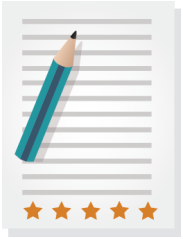
Updated 10/23/2024 v.20.1



NB100-664

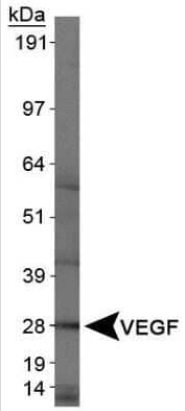
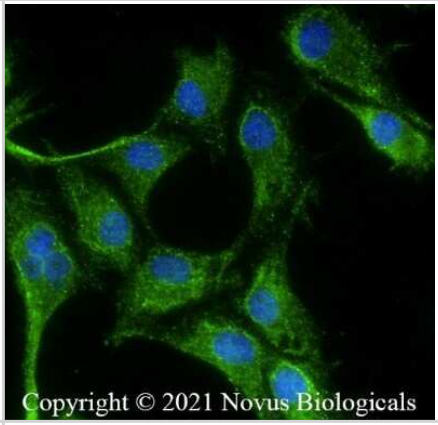
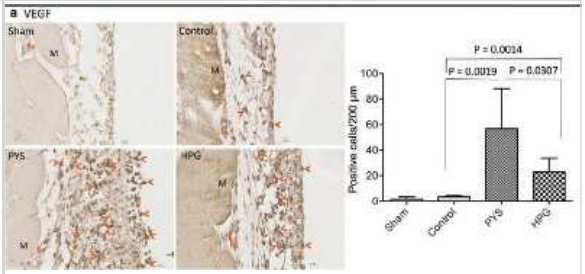
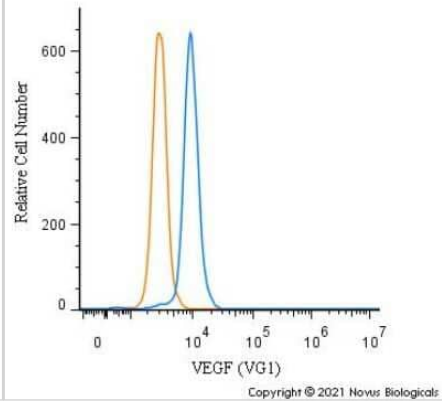
VEGF Antibody (VG1) - BSA Free

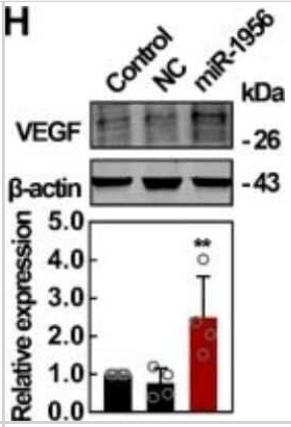
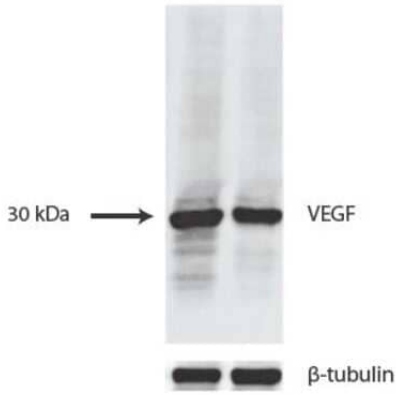
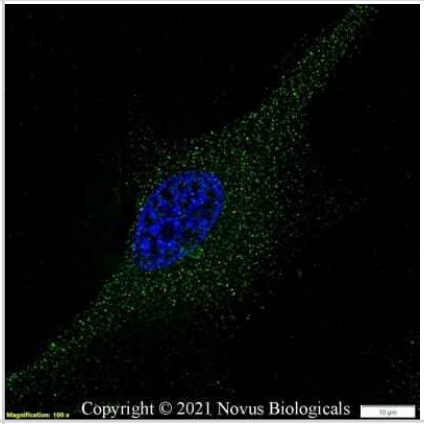
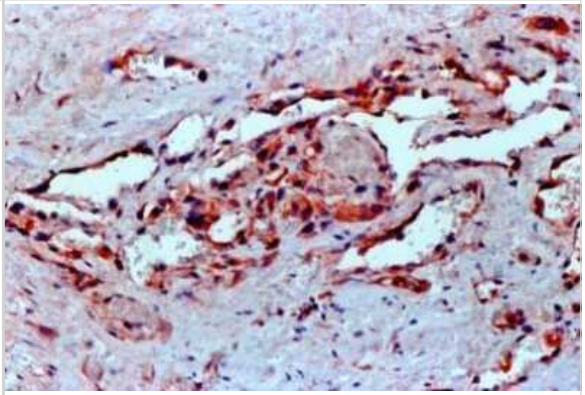
Product Information	
Unit Size	0.1 mg
Concentration	1 mg/ml
Storage	Store at 4C short term. Aliquot and store at -20C long term. Avoid freeze-thaw cycles.
Clonality	Monoclonal
Clone	VG1
Preservative	0.02% Sodium Azide
Isotype	IgG1 Kappa
Purity	Protein G purified
Buffer	PBS

Product Description	
Host	Mouse
Gene ID	7422
Gene Symbol	VEGFA
Species	Human, Mouse, Rat, Porcine, Canine
Reactivity Notes	Use in Rat reported in scientific literature (PMID:34423682). Use in Porcine reported in scientific literature (PMID:32132871).
Specificity/Sensitivity	This VEGF Antibody (VG1) detects the 189, 165 and 121 isoforms of VEGF
Immunogen	Recombinant VEGF 189 protein.

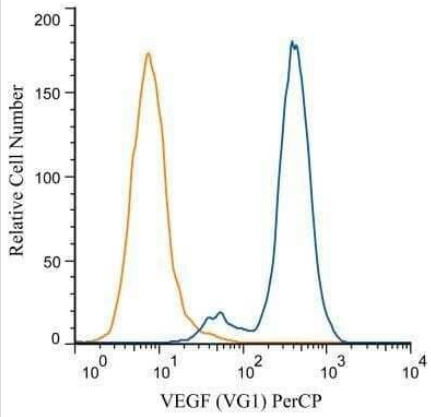
Product Application Details	
Applications	Western Blot, Simple Western, ELISA, Flow Cytometry, Immunocytochemistry/ Immunofluorescence, Immunohistochemistry, Immunohistochemistry-Frozen, Immunohistochemistry-Paraffin, CyTOF-ready
Recommended Dilutions	Western Blot 1-2 ug/ml, Simple Western, Flow Cytometry, ELISA, Immunohistochemistry 1:20-1:100, Immunocytochemistry/ Immunofluorescence 1:10-1:500, Immunohistochemistry-Paraffin 1:20-1:100, Immunohistochemistry-Frozen 1:20-1:100, CyTOF-ready
Application Notes	In IHC a dilution of 1:20-1:50 was used in an ABC method. However, depending on the staining conditions employed, we suggest that the final dilution should be determined by the user. We suggest an incubation period of 30-60 minutes at room temperature. High temperature treatment of formalin-fixed tissue sections using 1mM EDTA, pH 8.0 must be performed prior to the immunostaining. This antibody is CyTOF ready. See Simple Western Antibody Database for Simple Western validation: tested in mouse aortas and HUVEC lysate; separated by charge; detects a band at 30 kDa

Images

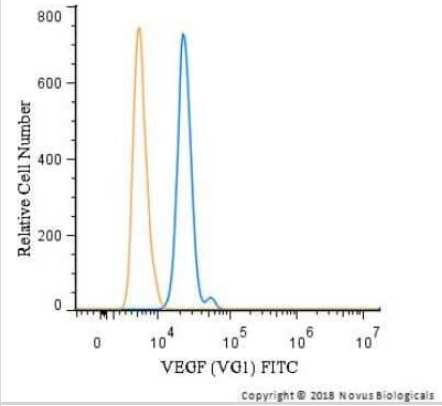
Analysis of VEGF in human kidney protein using NB100-664.	
U87 cells were fixed in 4% paraformaldehyde for 10 minutes and permeabilized in 0.05% Triton X-100 in PBS for 5 minutes. The cells were incubated with anti- NB100-664 at 1 ug/ml overnight at 4C and detected with an anti-mouse Dylight 488 (Green) at a 1:1000 dilution for 60 minutes. Nuclei were counterstained with DAPI (Blue). Cells were imaged using a 40X objective.	
Immunohistochemistry: VEGF Antibody (VG1) - BSA Free [NB100-664] - HPG induces less VEGF production, less myofibroblast differentiation and lower macrophage activation. The expression of VEGF, alpha-SMA and MAC387 in the peritoneal tissue sections was examined using a routine immunohistochemical method. Data were a typical microscopic view of the peritoneal tissue sections in each group. a VEGF was detected using mouse monoclonal anti-VEGF antibody from Novus. Left graph a typical microscopic view, Dark brown stain VEGF-expressing cells (pointed by red arrows), Bv blood vessels, M muscle, black small bar 10 um. Right graph VEGF-expressing cells per 200 um PM length in cross sections. Data were presented as mean +/- SD (n = 6) and were analyzed using t test. Image collected and cropped by CiteAb from the following publication (https://translational-medicine.biomedcentral.com/articles/10.1186/s12967-016-1098-z) licensed under a CC-BY license.	
An intracellular stain was performed on U-937 cells with NB100-664 (blue) and a matched isotype control (orange). Cells were fixed with 4% PFA and then permeabilized with 0.1% saponin. Cells were incubated in an antibody dilution of 1.0 ug/mL for 30 minutes at room temperature, followed by Mouse IgG (H+L) Cross-Adsorbed Secondary Antibody, Dylight 550 (35503, Thermo Fisher).	

After transfection with 50 nmol/L miR-1956 mimic for 3 days, the levels of secreted and cellular VEGF were evaluated using western blotting. Representative images of four independent experiments are shown. Data are shown as mean +/- SD. *, significantly different from control; **, p < 0.01. ADMSCs embedded in Matrigel were implanted subcutaneously on the back of mice. Image collected and cropped by CiteAb from the following publication (//pubmed.ncbi.nlm.nih.gov/31938051/) licensed under a CC-BY license.	
HUVEC and 293T cells transfected with a plasmid expressing human VEGF165 at 1:1000. Image provided by verified customer review.	
U-87 cells were fixed in 4% paraformaldehyde for 10 minutes and permeabilized in 0.05% Triton X-100 in PBS for 5 minutes. The cells were incubated with anti- NB100-664 at 2 ug/ml overnight at 4C and detected with an anti-mouse Dylight 488 (Green) at a 1:1000 dilution for 60 minutes. Nuclei were counterstained with DAPI (Blue). Cells were imaged using a 100X objective and digitally deconvolved.	
FFPE human angiosarcoma tissue section using VEGF antibody (clone VG1). The endothelial cells of the blood vessels and most of the cancer cells showed strong positivity for VEGF protein.	

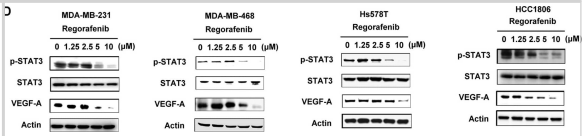
Analysis of PerCP conjugate of NB100-664. An intracellular stain was performed on HUVEC cells with VEGF (VG1) antibody NB100-664PCP (blue) and a matched isotype control NBP2-27287PCP (orange). Cells were fixed with 4% PFA and then permeablized with 0.1% saponin. Cells were incubated in an antibody dilution of 10 ug/mL for 30 minutes at room temperature. Both antibodies were conjugated to PerCP.



An intracellular stain was performed on U-937 cells with NB100-664F (blue) and a matched isotype control (orange). Cells were fixed with 4% PFA and then permeablized with 0.1% saponin. Cells were incubated in an antibody dilution of 10 ug/mL for 30 minutes at room temperature. Both antibodies were conjugated to FITC.

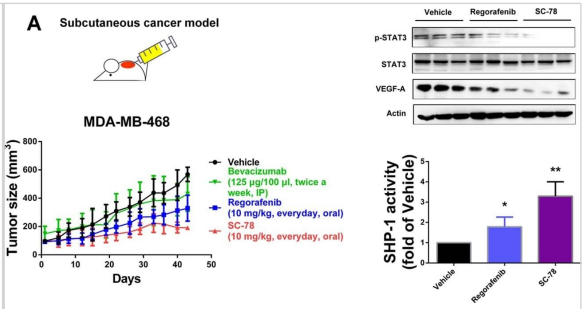


Western Blot: VEGF Antibody (VG1) - BSA Free [NB100-664] - Regorafenib reduced TNBC cell migration & targeted p-STAT3/VEGF-A signaling.(A) Chemical structure of regorafenib. (B,C), Transwell assay (B) & wound-healing assay (C) were performed in TNBC cell lines after regorafenib treatment for 24 h. *p < 0.05, **p < 0.01. (D) dose-dependent effects of regorafenib on p-STAT3 & VEGF-A proteins were analyzed by western blot. (E) Dose-dependent effects of regorafenib on VEGF-A mRNA were analyzed by qPCR. TNBC cells were exposed to the indicated doses for 24 hours. *p < 0.05, **p < 0.01. Image collected & cropped by CiteAb from the following publication (https://pubmed.ncbi.nlm.nih.gov/27364975), licensed under a CC-BY license. Not internally tested by Novus Biologicals.

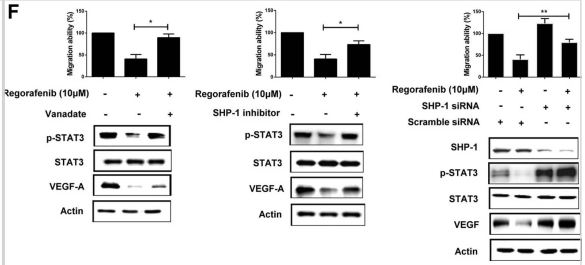


Western Blot: VEGF Antibody (VG1) - BSA Free [NB100-664] - SC-78, a derivative of regorafenib, exhibited more potent anti-migratory effects than regorafenib.(A) Chemical structure of SC-78. (B) The protein levels of p-VEGFR2, VEGFR2, p-PDGFR, & PDGFR in EAhy926 treated with various doses of regorafenib or SC-78 were determined by western blot. (C,D), The effect of SC-78 on migration of human TNBC cells was analyzed by Transwell migration assay (C) & wound-healing assay (D). *p < 0.05, **p < 0.01. (E) Human TNBC cells were treated with SC-78 dose dependently for 24 h, & the cell lysates were subjected to western blot assay. (F) MDA-MB-231 cells were transfected with vector control or VEGF-A overexpression plasmid (left), STAT3 overexpression plasmid (middle), scramble or SHP-1 siRNA (right), respectively. After 48 h transfection, cells were treated with SC-78 (2.5 μM) for 24 h & subjected to western blot assay or cells analyzed by Transwell migration assay. *p < 0.05, **p < 0.01. (G) SHP-1 activity assay was performed in MDA-MB-231 & MDA-MB-468 cells treated with SC-78 dose dependently. *p < 0.05, **p < 0.01. Image collected & cropped by CiteAb from the following publication (https://pubmed.ncbi.nlm.nih.gov/27364975), licensed under a CC-BY license. Not internally tested by Novus Biologicals.

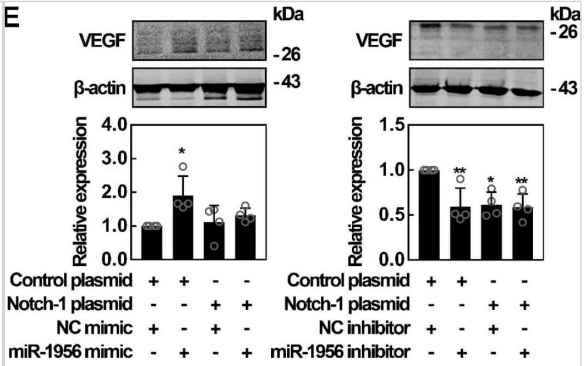
Western Blot: VEGF Antibody (VG1) - BSA Free [NB100-664] - Anti-tumor activity of regorafenib & SC-78 in a murine TNBC metastasis model.(A) Nude mice were subcutaneously injected with MDA-MB-468 cells (2 × 106). Mice were treated with vehicle, bevacizumab (125 μg/100 μl, twice a week, IP), regorafenib, or SC-78 (10 mg/kg, everyday, oral) for 43 days (n = 6), & the tumor size (left, bottom) was measured. In vivo protein levels were analyzed (Middle, top). Middle, bottom, the in vivo SHP-1 activity. Right, Representative images of IHC staining (100 ×). *p < 0.05, **p < 0.01. (B) Luciferase-expressing MDA-MB-231 (1 × 106) cells were injected orthotopically into the mammary fat pad of the mice. After two weeks, mice received regorafenib & SC-78, or vehicle orally at 10 mg/kg/every day (n = 5). Tumor growth was monitored by IVIS imaging system at the indicated times. Left, top, visualized by IVIS analysis. Left, bottom, quantification analysis from the IVIS total flux. Right, Representative images of IHC staining (100×). *p < 0.05, **p < 0.01. (C) In vivo bioluminescence images of nude mice injected i.v. with MDA-MB-231/Luc2 cells (1 × 106). After bioluminescence was observed, mice received vehicle or SC-78 orally at 10 mg/kg/every day. left, visualized by IVIS analysis. Right, Kaplan–Meier plot showing animal survival after treatment with vehicle or SC-78 (n = 8). The survival endpoint was set at 64 days after drug administration. (D) Schematic displays the drug mechanism of regorafenib & SC-78 on VEGF-A autocrine & paracrine inhibition & cell migration. SC-78 suppressed cancer metastasis dominantly through SHP-1 dependent-STAT3 dephosphorylation. Image collected & cropped by CiteAb from the following publication (https://pubmed.ncbi.nlm.nih.gov/27364975), licensed under a CC-BY license. Not internally tested by Novus Biologicals.



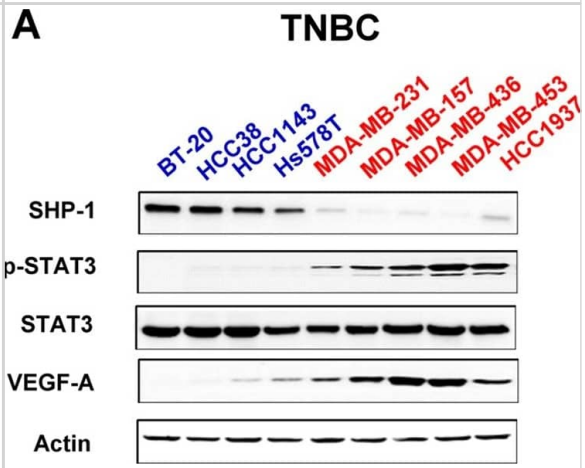
Western Blot: VEGF Antibody (VG1) - BSA Free [NB100-664] - Regorafenib transcriptionally inhibited VEGF-A expression through decreasing binding of STAT3 on promoter of VEGF-A.(A) Top, MDA-MB-231 cells co-transfected w/ a Renilla control vector & plasmids containing firefly luciferase gene driven by wild-type or STAT3 binding site-mutated VEGF-A promoter. After transfection for 48 h, cells treated w/ regorafenib for 24 h. Promoter activity analyzed by luciferase assay after regorafenib treatment. Bottom, MDA-MB-231 cells transfected w/ vector-control or STAT3-overexpression plasmid for 48 h. After , cells further co-transfected w/ Renilla & wild-type VEGF-A promoter & detect promoter activity as mentioned above. *p < 0.05, **p < 0.01. (B) After regorafenib treatment for 24 h, STAT3 binding site fragment detected by PCR in ChIP samples precipitated w/ STAT3 & rabbit IgG control antibodies in MDA-MB-231 cells. (C,D), MDA-MB-231 cells transfected, respectively, w/ control vector or VEGF-A overexpression plasmid (C) or STAT3 overexpression plasmid (D) for 48 h. After transfection, cells treated w/wo regorafenib for 24 h & subjected to WB assay or seeded to Transwell to analyze migration ability. *p < 0.05, **p < 0.01. (E) Cells treated w/ regorafenib at indicated dosages for 24 h & cell lysates analyzed by SHP-1 phosphatase activity assay. *p < 0.05, **p < 0.01. (F) MDA-MB-231 cells pretreated w/ pan-phosphatase inhibitor (left), or specific SHP-1 inhibitor (Middle) for 1 h before regorafenib treatment. Right, MDA-MB-231 cells transfected, respectively, w/ control siRNA or SHP-1 siRNA for 48 h. After transfection, cells treated w/wo regorafenib (10 μM) for 24 h. The protein levels analyzed by WB assay or cells seeded to Transwell to analyze migration ability. *p < 0.05, **p < 0.01. Image collected & cropped by CiteAb from following publication (https://pubmed.ncbi.nlm.nih.gov/27364975), licensed under a CC-BY license. Not internally tested by Novus Biologicals.



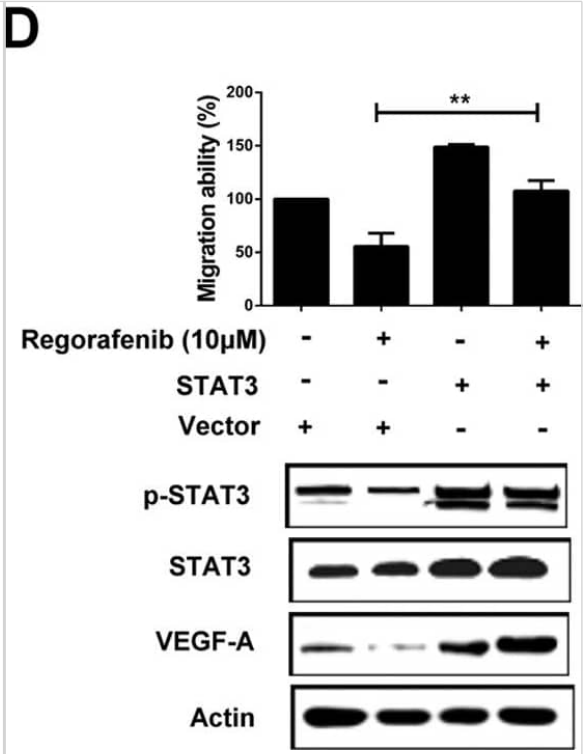
Western Blot: VEGF Antibody (VG1) - BSA Free [NB100-664] - Notch-1 is identified as an intermediate molecule in the miR-1956-VEGF axis. (A) Notch-1 is a target gene for miR-1956. The sequence of miR-1956, the potential binding site at the 3' UTR of Notch-1 mRNA, & the nucleotides mutated in the Notch-1-3' UTR mutant are shown. HEK293 cells were transiently cotransfected with miR-1956 mimic or NC using luciferase reporter vectors. The luciferase activity was normalized to the activity of Renilla luciferase. Data are shown as mean ± SD from three independent experiments. *, significantly different from NC; **, p < 0.01. After transfection with 50 nmol/L of miR-1956 mimic for 3 days, the mRNA level of Notch-1 was determined using qRT-PCR (B), & the protein expression of Notch-1 was measured using western blotting (C). For B, data are shown as mean ± SD from three independent experiments. *, significantly different from control; **, p < 0.01. For C, representative images of two independent experiments are shown. Data are shown as mean ± SD. *, significantly different from control; **, p < 0.01. ADMSCs were transfected with 2.5 μg Notch-1 plasmid & 50 nmol/L miR-1956 mimic or 100 nmol/L miR-1956 inhibitor for 3 days, the intracellular expression of Notch-1 (D) & VEGF (E) was detected by western blotting. For D & E, representative images of four independent experiments are shown. Data are shown as mean ± SD. *, significantly different from the control group transfected with control plasmid & NC mimic or inhibitor; *, p < 0.01; **, p < 0.01. #, significantly different from the group transfected with Notch-1 plasmid & NC mimic or inhibitor; #, p < 0.05. One-way ANOVA followed by Tukey's post-test was performed (A-E). Image collected & cropped by CiteAb from the following publication (https://pubmed.ncbi.nlm.nih.gov/31938051), licensed under a CC-BY license. Not internally tested by Novus Biologicals.



Western Blot: VEGF Antibody (VG1) - BSA Free [NB100-664] - SHP-1 is negatively associated with p-STAT3/VEGF-A signaling & metastasis in TNBC cells & clinical samples.(A) Protein expression pattern of SHP-1, p-STAT3, & VEGF-A in nine TNBC cell lines were analyzed by western blot. (B) The migration abilities of nine TNBC cell lines were analyzed by Transwell assay. DAPI stains the nuclei. BT-20 cells were used as a normalization control. (C) The correlation (linear regression model) of VEGF-A (top), p-STAT3 (middle), & SHP-1 (bottom) & migration ability in nine TNBC cell lines. (D) TNBC cells from representative two patients with SHP-1, p-STAT3, & VEGF-A staining. (200×) (E) Kaplan-Meier graph was prepared to compare DMFS (left) & DFS (right) in patients with high VEGF-A (H score > 160) or low VEGF-A (H score < = 160) levels for the indicated time of follow up. Chi-square test indicated a significant difference between VEGF-A high (N = 21) & low (N = 76) patients. Image collected & cropped by CiteAb from the following publication (https://pubmed.ncbi.nlm.nih.gov/27364975), licensed under a CC-BY license. Not internally tested by Novus Biologicals.



Western Blot: VEGF Antibody (VG1) - BSA Free [NB100-664] - Regorafenib transcriptionally inhibited VEGF-A expression through decreasing binding of STAT3 on promoter of VEGF-A.(A) Top, MDA-MB-231 cells co-transfected w/ a Renilla control vector & plasmids containing firefly luciferase gene driven by wild-type or STAT3 binding site-mutated VEGF-A promoter. After transfection for 48 h, cells treated w/ regorafenib for 24 h. Promoter activity analyzed by luciferase assay after regorafenib treatment. Bottom, MDA-MB-231 cells transfected w/ vector-control or STAT3-overexpression plasmid for 48 h. After , cells further co-transfected w/ Renilla & wild-type VEGF-A promoter & detect promoter activity as mentioned above. *p < 0.05, **p < 0.01. (B) After regorafenib treatment for 24 h, STAT3 binding site fragment detected by PCR in ChIP samples precipitated w/ STAT3 & rabbit IgG control antibodies in MDA-MB-231 cells. (C,D), MDA-MB-231 cells transfected, respectively, w/ control vector or VEGF-A overexpression plasmid (C) or STAT3 overexpression plasmid (D) for 48 h. After transfection, cells treated w/wo regorafenib for 24 h & subjected to WB assay or seeded to Transwell to analyze migration ability. *p < 0.05, **p < 0.01. (E) Cells treated w/ regorafenib at indicated dosages for 24 h & cell lysates analyzed by SHP-1 phosphatase activity assay. *p < 0.05, **p < 0.01. (F) MDA-MB-231 cells pretreated w/ pan-phosphatase inhibitor (left), or specific SHP-1 inhibitor (Middle) for 1 h before regorafenib treatment. Right, MDA-MB-231 cells transfected, respectively, w/ control siRNA or SHP-1 siRNA for 48 h. After transfection, cells treated w/wo regorafenib (10 μM) for 24 h. The protein levels analyzed by WB assay or cells seeded to Transwell to analyze migration ability. *p < 0.05, **p < 0.01. Image collected & cropped by CiteAb from following publication (https://pubmed.ncbi.nlm.nih.gov/27364975), licensed under a CC-BY license. Not internally tested by Novus Biologicals.



Publications

Jin, Y;Peng, Y;Xu, J;Yuan, Y;Yang, N;Zhang, Z;Xu, L;Li, L;Xiong, Y;Sun, D;Pan, Y;Wu, R;Fu, J; LUBAC promotes angiogenesis and lung tumorigenesis by ubiquitinating and antagonizing autophagic degradation of HIF1? Oncogenesis 2024-01-25 [PMID: 38272870]

Jingan Chen, Yi Liu, Jingwen Zhang, Yuping Yang, Haowei Liang, Ting Li, Li Yan, Li Zhou, Letian Shan, Hui Wang External Application of Human Umbilical Cord-Derived Mesenchymal Stem Cells in Hyaluronic Acid Gel Repairs Foot Wounds of Types I and II Diabetic Rats Through Paracrine Action Mode Stem Cells Translational Medicine 2023-10-01 [PMID: 37639574]

Xiaoyu Tang, Kaixuan Cui, Xi Lu, Peiqi Wu, Shanshan Yu, Boyu Yang, Yue Xu, Xiaoling Liang A Novel Hypoxia-inducible Factor 1α Inhibitor KC7F2 Attenuates Oxygen-induced Retinal Neovascularization Investigative Ophthalmology & Visual Science 2022-06-13 [PMID: 35695808]

X Liu, Z Li, J Sun, Z Zhang, W Li Interaction between PD-L1 and soluble VEGFR1 in glioblastoma-educated macrophages BMC Cancer, 2023-03-20;23(1):259. 2023-03-20 [PMID: 36941554]

Jarman EJ, Ward C, Turnbull AK et al. HER2 regulates HIF-2a and drives an increased hypoxic response in breast cancer. Breast Cancer Res. 2019-01-22 [PMID: 30670058]

Sabry D, Mostafa A, Marzouk S et al. Neupogen and mesenchymal stem cells are novel therapeutic agents in regeneration of induced endometrial fibrosis in experimental rats Biosci. Rep. 2017-09-07 [PMID: 28883083]

Quimbaya P, Garzon V, Bustos R et al. Real-time quantification of proteins secreted of conditioned media from mesenchymal stromal cells (MSC) in co-culture with hematopoietic progenitor cells Sensing and Bio-Sensing Research 2023-11-01 (SPR, Human)

Bhave S, Esposito M, Swain L et al. Loss of Bone Morphogenetic Protein (BMP)-9 Reduces Survival and Increases MMP Activity after Myocardial Infarction JACC: Basic to Translational Science 2023-08-01 (WB, Mouse)

de Barros Sene L, Lamana GL, Schwambach Vieira A et al. Gestational Low Protein Diet Modulation on miRNA Transcriptome and Its Target During Fetal and Breastfeeding Nephrogenesis Frontiers in Physiology 2021-06-22 [PMID: 34239447] (Immunohistochemistry)

Li M, Wang Q, Han Q et al. Novel Molecule Nell-1 Promotes the Angiogenic Differentiation of Dental Pulp Stem Cells Frontiers in Physiology 2021-08-26 [PMID: 34512380] (Immunohistochemistry, Immunocytochemistry/ Immunofluorescence)

Hong Y, Wang Y, Cui Y et al. MicroRNA-124-3p Attenuated Retinal Neovascularization in Oxygen-Induced Retinopathy Mice by Inhibiting the Dysfunction of Retinal Neuroglial Cells through STAT3 Pathway International journal of molecular sciences 2023-07-21 [PMID: 37511525] (IHC, Mouse)

Goudreau AD, Tanara L, Tzaneva V, Adamo KB Examining the Effects of Gestational Physical Activity and Hofbauer Cell Polarization on Angiogenic Factors International journal of environmental research and public health 2023-07-04 [PMID: 37444145] (ICC/IF, Human)

Details:
1:100 ICC/IF dilution

More publications at http://www.novusbio.com/NB100-664

Novus Biologicals USA
10730 E. Briarwood Avenue
Centennial, CO 80112
USA
Phone: 303.730.1950
Toll Free: 1.888.506.6887
Fax: 303.730.1966
nb-customerservice@bio-techne.com

Bio-Techne Canada
21 Canmotor Ave
Toronto, ON M8Z 4E6
Canada
Phone: 905.827.6400
Toll Free: 855.668.8722
Fax: 905.827.6402
canada.inquires@bio-techne.com

Bio-Techne Ltd
19 Barton Lane
Abingdon Science Park
Abingdon, OX14 3NB, United Kingdom
Phone: (44) (0) 1235 529449
Free Phone: 0800 37 34 15
Fax: (44) (0) 1235 533420
info.EMEA@bio-techne.com

General Contact Information
www.novusbio.com
Technical Support: nb-technical@bio-techne.com
Orders: nb-customerservice@bio-techne.com
General: novus@novusbio.com

Products Related to NB100-664

NB820-59231	Human Kidney Whole Tissue Lysate (Adult Whole Normal)
HAF007	Goat anti-Mouse IgG Secondary Antibody [HRP]
NB720-B	Rabbit anti-Mouse IgG (H+L) Secondary Antibody [Biotin]
NBP1-43319-0.5mg	Mouse IgG1 Kappa Isotype Control (P3.6.2.8.1)

Limitations
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