

# Product Datasheet

## CD31/PECAM-1 Antibody NB100-2284

Unit Size: 0.1 ml

Store at 4C. Do not freeze.

[www.novusbio.com](http://www.novusbio.com)



[technical@novusbio.com](mailto:technical@novusbio.com)

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**NB100-2284**

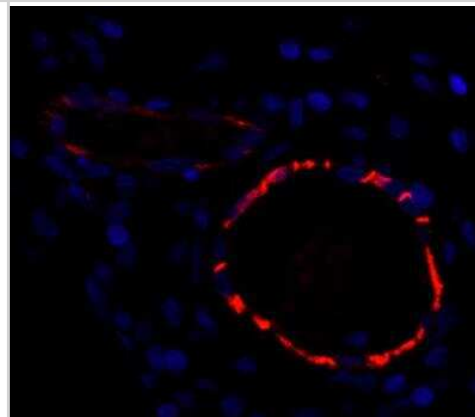
## CD31/PECAM-1 Antibody

Product Information	
Unit Size	0.1 ml
Concentration	0.1 mg/ml
Storage	Store at 4C. Do not freeze.
Clonality	Polyclonal
Preservative	0.09% Sodium Azide
Isotype	IgG
Purity	Immunogen affinity purified
Buffer	TBS, 0.1% BSA
Target Molecular Weight	82.5 kDa
Product Description	
Description	Novus Biologicals Rabbit CD31/PECAM-1 Antibody (NB100-2284) is a polyclonal antibody validated for use in IHC, WB and ICC/IF. Anti-CD31/PECAM-1 Antibody: Cited in 135 publications. All Novus Biologicals antibodies are covered by our 100% guarantee.
Host	Rabbit
Gene ID	5175
Gene Symbol	PECAM1
Species	Human, Mouse, Rat, Porcine, Canine
Reactivity Notes	Mouse reactivity reported in scientific literature (PMID: 23317813). Rat reactivity reported in scientific literature (PMID: 29960821). Porcine reactivity reported from a verified customer review. Canine reactivity reported from a verified customer review.
Immunogen	The immunogen recognized by this CD31/PECAM-1 Antibody maps to a region between residue 700 and the C-terminus (residue 738) of human CD31 using the numbering given in entry NP_000433.2 (Gene ID 5175).
Product Application Details	
Applications	Western Blot, Immunohistochemistry-Paraffin, Immunocytochemistry/Immunofluorescence, Immunohistochemistry, Immunohistochemistry-Frozen
Recommended Dilutions	Western Blot 1:100 - 1:2000, Immunohistochemistry 1:100 - 1:500, Immunocytochemistry/ Immunofluorescence 1:50 - 1:500, Immunohistochemistry-Paraffin 1:100 - 1:500, Immunohistochemistry-Frozen 1:10 - 1:500
Application Notes	For IHC-P: Epitope exposure is recommended, with citrate buffer will enhance staining. In some cases, the antibody may be diluted further than indicated. IHC-Fr, WB reactivity reported in scientific literature (PMID:23317813). ICC/IF reactivity reported in scientific literature (PMID: 27328066).

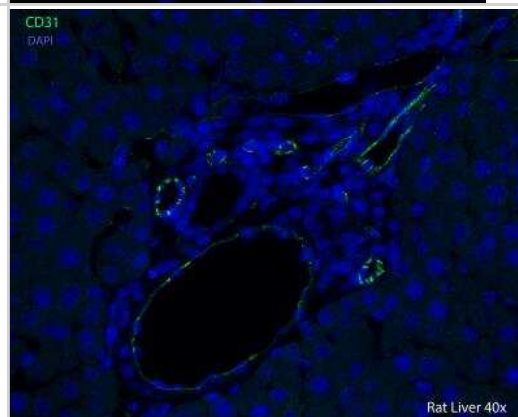


## Images

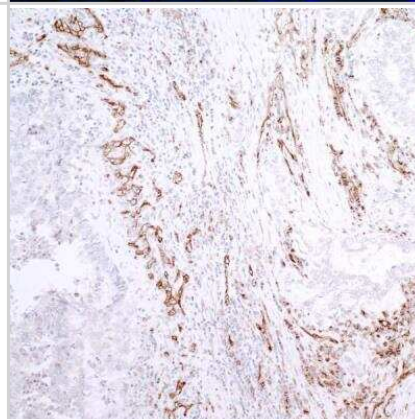
FFPE section of human breast carcinoma. Antibody: Affinity purified rabbit CD31/PECAM-1 Antibody (NB100-2284) used at a dilution of 1:100. Detection: Red-fluorescent goat anti-rabbit IgG-Hilyte Plus™ 555



Staining of CD31/PECAM-1 in Rat Liver sample. IHC-P image submitted by a verified customer review.



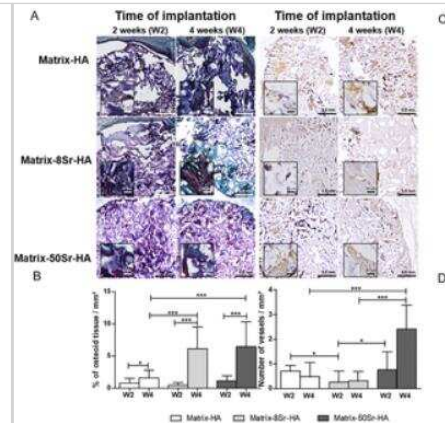
Human lung adenocarcinoma using. Antibody at 1:100 with citrate epitope retrieval at pH 6.0.



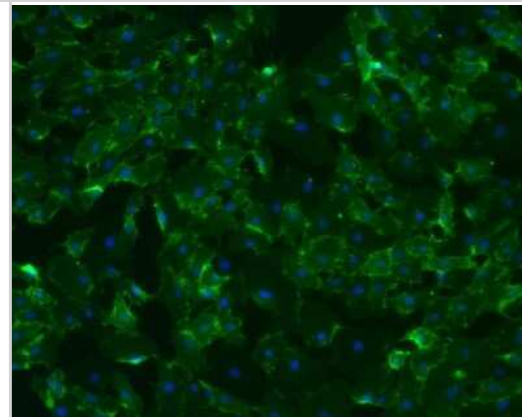
Analysis in rat muscle blood vessels using. IHC-P image submitted by a verified customer review.



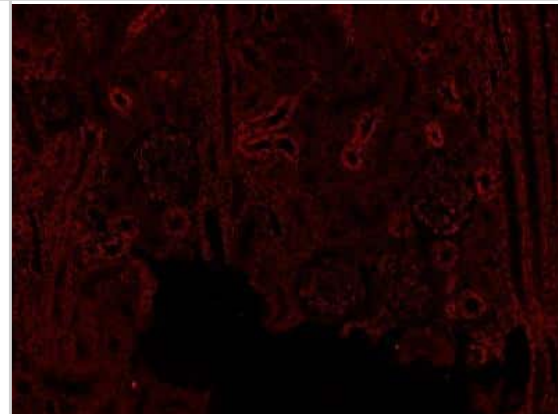
Matrix-HA supplemented with strontium was implanted subcutaneously in mice, where immunochemistry analysis and histology occurred of the newly formed tissues. (C) Within each matrix: Matrix-HA, Matrix-8Sr-HA and Matrix-50Sr-HA, were indicated by immunostaining of CD31 for the newly formed tissues. (D) Number of vessels within each tissue was quantified using NDP view software. Unit is square mm. Immunostaining analysis of slides occurred for 2 samples per condition and 3 sections were analyzed per sample and per group of matrix. Citation: Ehret C, Aid-Launais R, Sagardoy T, Siadous R, Bareille R, Rey S, et al. (2017) Strontium-doped hydroxyapatite polysaccharide materials effect on ectopic bone formation. PLoS ONE 12(9): e0184663. <https://doi.org/10.1371/journal.pone.0184663>



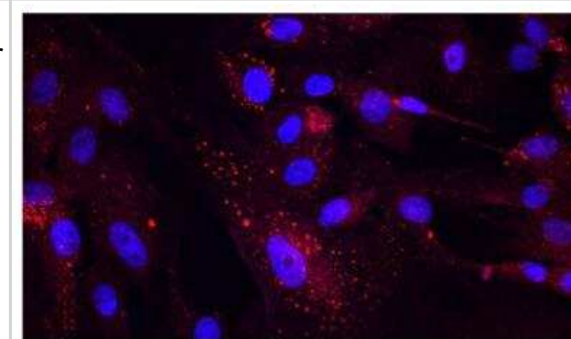
Imaging of HUVEC monolayer on glass substrate. Fixation with 4% PFA. Blocking with Goat Serum at 1:100. Incubation 2 hours at room temperature. ICC/IF image submitted by a verified customer review.



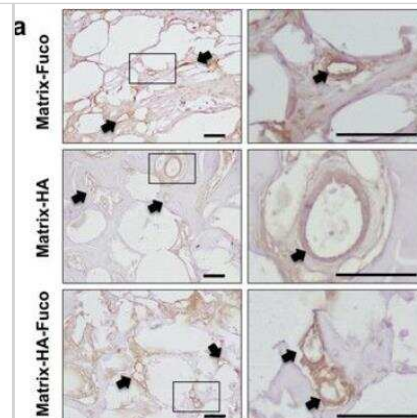
Analysis of canine kidney tissue using CD31/PECAM-1 antibody. Antibody was used at a 1:50 concentration in Casein in PBS and left at 4C overnight on paraffin embedded canine bladder tissue. HIER was performed in Tris/EDTA buffer, pH 9 for two hours at 75C. Image from verified customer review.



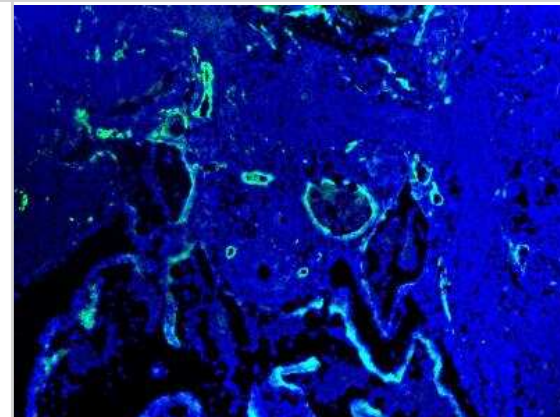
Analysis in pig SC cells using CD31/PECAM-1 Antibody (red). Blue color showing nucleus labeling. ICC/IF image submitted by a verified customer review.



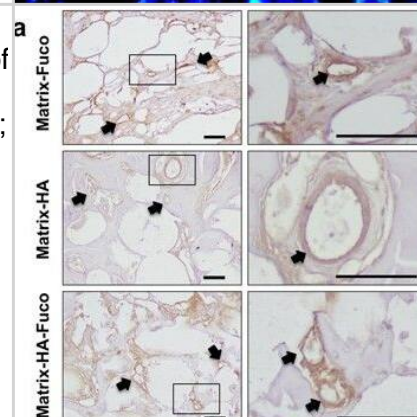
Immunohistochemistry evaluation of CD31/PECAM-1 expression. Representative images of CD31/PECAM-1 staining of vessels in the three groups of implanted matrices (scale bar = 100  $\mu$ m). Image collected and cropped by CiteAb from the following publication (<https://www.nature.com/articles/s41598-017-06258-0>) licensed under a CC-BY license.



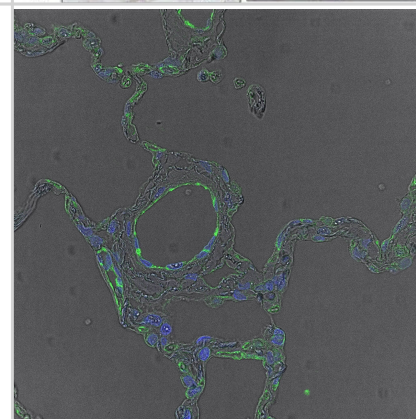
CD31 staining on E11.5 mouse Pharyngeal Mesoderm. Fixed with 4% PFA overnight. Blocked with 1% BSA. Primary antibody at 1:100. Secondary antibody at 1:1000, conjugated to Alexa Fluor 488. IHC-Fr image submitted by a verified customer review.



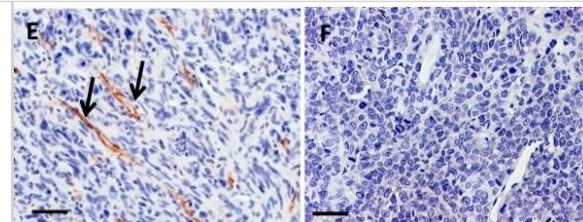
Immunohistochemistry evaluation of CD31 expression. (a) Representative images of CD31 staining of vessels in the three groups of implanted matrices (scale bar = 100  $\mu$ m). (b) Quantification of vessel density inside the implanted matrices at 5 weeks post implantation (n = 6; Average  $\pm$  SD). NS and \*\*denote Non Significant and  $p < 0.01$ , respectively.



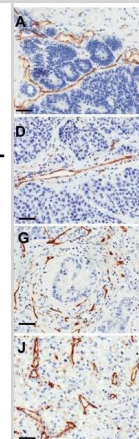
Immunohistochemistry: Rabbit Polyclonal CD31/PECAM-1 Antibody [NB100-2284] - Staining of CD31 in human lung tissue. Nuclei in blue and CD31 (vessel) in green. Mouse anti-CD31 (1:100, overnight incubation at +4°C), followed by donkey anti-mouse 488 (1:400, 3h at RT). Image from a verified customer review.



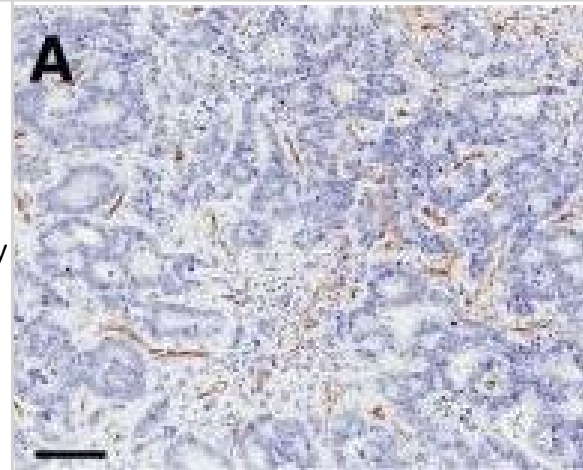
Immunohistochemistry: CD31/PECAM-1 Antibody [NB100-2284] - Antibodies selected for characterization of stromal cells & vasculature in FFPE specimens are species-specific. (A, B) Labeling of a patient colon tumor (A) & Colo205 human cell line xenograft (B) with anti-human mitochondrial antibody (single arrow- tumor cells; double arrows-stroma). (C, D) Labeling of a patient pancreatic tumor (C) & Colo205 human cell line xenograft (D) with anti-human CD34. (E, F) Labeling of a patient lung tumor (E) & Colo205 xenograft (F) with anti-human CD31. (G, H) Labeling of a patient lung tumor (G) & Colo205 xenograft (H) with anti-mouse CD34. (bars = 50  $\mu$ ). Image collected & cropped by CiteAb from the following publication (<https://translational-medicine.biomedcentral.com/articles/10.1186/1479-5876-11-110>), licensed under a CC-BY license. Not internally tested by Novus Biologicals.



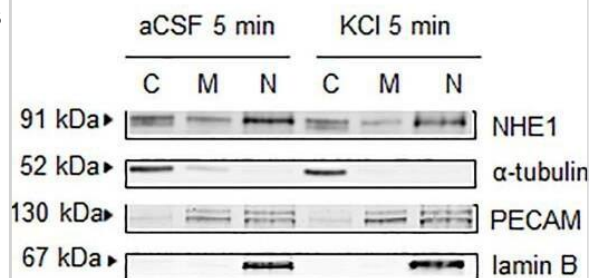
Immunohistochemistry: CD31/PECAM-1 Antibody [NB100-2284] - At the time of second passage, vessels in successfully growing xenografts of four different tumor types surveyed were of murine origin: A-C Colon; D-F Lung; G-I Pancreatic; J-L Renal Cell Carcinoma. For each tumor type, a representative section of an original patient specimen labeled with anti-huCD31 is shown (A, D, G, J). For each tumor, sections of the first passage xenografted tumor when it was resected are also shown; while no huCD31(+) vessels were identified in the xenografts (B, E, H, K), msCD34(+) vessels were abundant (C, F, I, L). (bars = 50  $\mu$ ). Image collected & cropped by CiteAb from the following publication (<https://translational-medicine.biomedcentral.com/articles/10.1186/1479-5876-11-110>), licensed under a CC-BY license. Not internally tested by Novus Biologicals.



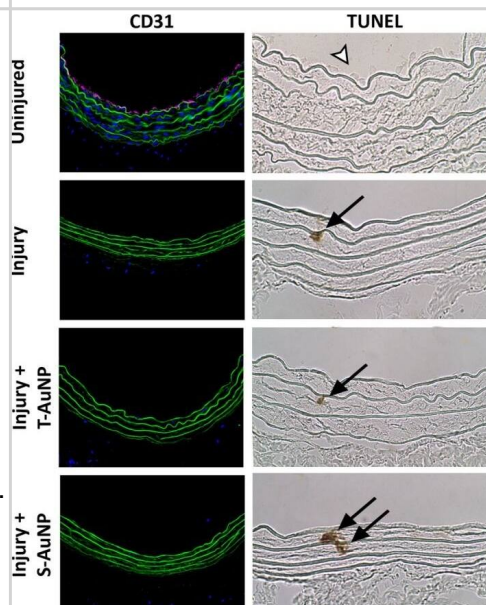
Immunohistochemistry: CD31/PECAM-1 Antibody [NB100-2284] - Vascularization of an engrafted patient colon tumor. A patient colon tumor was implanted in a cohort of mice & vessel development was analyzed over 8 weeks. Vessels in the original patient specimen labeled strongly for huCD31 (A) & not for msCD34 (D). Representative sections showing loss of huCD31(+) vessels (B- 4 weeks, C- 7 weeks) & presence of msCD34(+) vessels (E- 4 weeks, F- 7 weeks) are shown. The graph (G) summarizes this process; huCD31(+) vessels were rapidly lost, & by one week, mouse vessels were the predominate vessels present in the colon tumors (no data for msCD34 at 2 weeks; bars = 100  $\mu$ ). Image collected & cropped by CiteAb from the following publication (<https://translational-medicine.biomedcentral.com/articles/10.1186/1479-5876-11-110>), licensed under a CC-BY license. Not internally tested by Novus Biologicals.



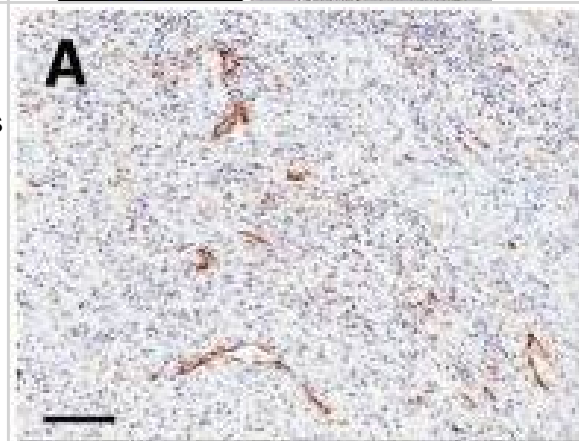
Western Blot: CD31/PECAM-1 Antibody [NB100-2284] - KCl pulse decreased membrane, but increased nuclear, detection of NHE1 in b.End3 endothelial cells. (A) Representative immunofluorescence images of bEnd.3 cells at two time-points after KCl or aCSF pulse. (B) Representative immunoblots of NHE1,  $\alpha$ -tubulin, PECAM, & lamin B in cytosol, membrane, & nuclear fractions of bEnd.3 cells harvested at 5 min after KCl or aCSF pulse. (C = cytosol, M = membrane, N = nuclear) Values represent the mean ratio of NHE1 detection  $\pm$  SEM (n = 11–12). (C) Representative immunoblots indicating NHE1 &  $\alpha$ -tubulin as a loading control in whole cell lysate of bEnd.3 cells harvested at 5 min after KCl or aCSF pulse. Values represent the % of aCSF-treated relative expression  $\pm$  SEM (n = 6). (D) Representative immunoblots of NHE1 &  $\alpha$ -tubulin as a loading control in whole lysate of microvessels harvested at 90 min after cortical injection of KCl or aCSF. Values represent the % of naive relative expression  $\pm$  SEM (n = 6). # denotes significantly different vs naive (p<0.01), as assessed by one-way ANOVA (E) Intracellular pH during aCSF or KCl pulse. All data represent mean  $\pm$  SEM (n = 45). (F) Extracellular pH during aCSF or KCl pulse. All data represent mean  $\pm$  SEM (n = 6) in triplicate. Image collected & cropped by CiteAb from the following publication (<https://pubmed.ncbi.nlm.nih.gov/32469979>), licensed under a CC-BY license. Not internally tested by Novus Biologicals.

**B.**

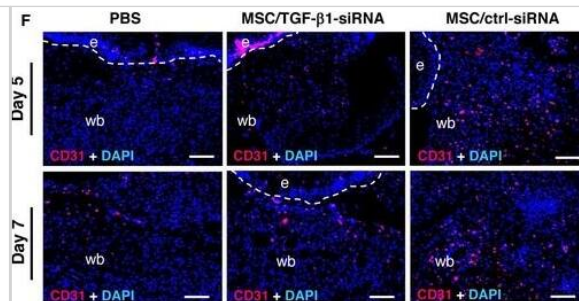
Immunocytochemistry/ Immunofluorescence: CD31/PECAM-1 Antibody [NB100-2284] - Impact of T $\square$ AuNPs on endothelial cells in vivo. Immunofluorescent staining for endothelial cells using an anti $\square$ CD 31 antibody revealed an intact endothelial cell monolayer in the uninjured control carotid artery (N = 3). As expected post balloon angioplasty, there is no endothelial cell monolayer of the injured left carotid arteries in the injury alone, injury + T $\square$ AuNP, & injury + S $\square$ AuNP treatment conditions. Green indicates autofluorescence of the elastic lamina. Magenta indicates endothelial cells. Images obtained using 25 $\times$  magnification with exposure time of 400 msec. TUNEL staining for apoptosis revealed no evidence of endothelial cell apoptosis in the uninjured control carotid arteries, with a prominent endothelial cell monolayer (white arrowhead). Mild apoptosis was noted in the media of balloon $\square$ injured left carotid arteries, as expected. Black arrows indicate apoptotic cells. Representative images obtained using 40 $\times$  magnification. Image collected & cropped by CiteAb from the following publication (<https://pubmed.ncbi.nlm.nih.gov/28242820>), licensed under a CC-BY license. Not internally tested by Novus Biologicals.



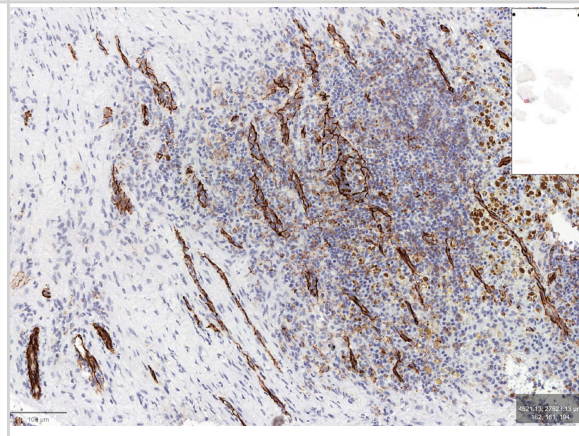
Immunohistochemistry: CD31/PECAM-1 Antibody [NB100-2284] - The growth of a patient mesothelioma xenograft was supported by development of a murine vascular network. A patient mesothelioma was implanted in a cohort of mice & monitored for tumor growth. Once tumors began to actively grow, representative tumors were resected at weekly intervals & analyzed for vessel content. Staining for huCD31 was prominent in the original patient specimen (A), much reduced at 4 weeks (B) & negligible at 9 weeks (C). In contrast, patient specimens were not stained for msCD34 (D), whereas at 4 weeks large numbers of vessels stained for msCD34 (E) & by 9 weeks, msCD34 labeled vessels were predominant (F). The graph (G) summarizes the loss of detectable human vessels & acquisition of murine vessels over a 9 week period. (bars = 100  $\mu$ ). Image collected & cropped by CiteAb from the following publication (<https://translational-medicine.biomedcentral.com/articles/10.1186/1479-5876-11-110>), licensed under a CC-BY license. Not internally tested by Novus Biologicals.



Immunocytochemistry/ Immunofluorescence: CD31/PECAM-1 Antibody [NB100-2284] - TGF $\beta$ 1 released by MSCs contributes to induced myofibroblast differentiation & granulation tissue formation— $2.5 \times 10^5$  of TGF $\beta$ 1 siRNA or control siRNA-transfected AT-MSCs were intradermally injected around each of CD18 $^{-/-}$  murine wound. PBS mock injection served as negative control. Wound tissue was harvested at day 2, 5, & 7 post-wounding for quantification of human TGF $\beta$ 1 mRNA (A) at day 2 by qPCR, total TGF $\beta$ 1 (B), & active TGF $\beta$ 1 (C) protein at day 5 by ELISA. Data are expressed as mean  $\pm$  SEM,  $n = 3$  wounds per group,  $**P < 0.01$ , by one-way ANOVA with Tukey's test. D—G Expression of  $\alpha$ -SMA (D & E) & CD31 (F & G) at days 5 & 7 by immunostaining on tissue sections. The dashed lines indicate the border of the wound bed & epidermis or eschar. e, epidermis; es, eschar; wb, wound bed. Scale bars: 100  $\mu$ m. Quantification data are expressed as mean  $\pm$  SEM,  $n = 3$  wounds per group,  $*P < 0.05$ ,  $***P < 0.001$ , by one-way ANOVA with Tukey's test. Source data are available online for this figure. Image collected & cropped by CiteAb from the following publication (<https://pubmed.ncbi.nlm.nih.gov/32080965>), licensed under a CC-BY license. Not internally tested by Novus Biologicals.



Immunohistochemistry-Paraffin: Rabbit Polyclonal CD31/PECAM-1 Antibody [NB100-2284] - CD31 positive vessels in a canine splenic hemangiosarcoma. Tissue slides were loaded into automated research stainer, dewaxed and pretreated with EDTA-based epitope retrieval ER2 solution for 20 mins at 100°C. After a peroxide incubation for 5 min, the rabbit antibody against CD31 (NB100-2284) (1:100) was incubated for 60 mins at room temperature followed by Bond Polymer (anti-rabbit HRP) incubation for 8 min at room temperature. Mixed DAB reagent (Polymer Refine Detection Kit) was incubated for 10 mins, and Hematoxylin (Refine Detection Kit) counterstaining for 10 mins. After staining, sample slides were washed in water, dehydrated using ethanol gradient (70%, 90%, 100%), washed three times, and mounted in mounting medium. Image from a verified customer review.



## Publications

Gangi A, Li T, Lim Y et al. S-Adenosylmethionine Inhibits Plasminogen-Activating Inhibitor-1 and Protects Male Mice from FOLFOX-Induced Liver Injury Cellular and molecular gastroenterology and hepatology 2025-01-01 [PMID: 40246076]

Lim G, An J, Lee J et al. TSG6 affects anti cancer drug resistance and angiogenesis in 3D spheroid model of canine mammary gland tumor cells Scientific reports 2025-08-22 [PMID: 40846720]

Dai Y, Chen H, Zhou M et al. Identification and Validation of Pyroptosis-Associated Gene Signature in Primary Sjögren's Syndrome. Mediators of Inflammation 2025-10-13 [PMID: 41078717]

Yamaguchi R, Ikeda M, Takeuchi S et al. Possible Involvement of CSPG4 in Promoting Endothelial Cell Migration and Contributing to Angiogenesis during Skeletal Muscle Regeneration and Development in the Rat Animal science journal = Nihon chikusan Gakkaiho 2025-08-06 [PMID: 40769519]

Rodriguez-Rivera G, Sharma S, Maduka C et al. Microgel Aspect Ratio Influences Injectable Granular Hydrogel Scaffold Pore Structure and Cellular Invasion for Tissue Repair. Advanced science (Weinheim, Baden-Wuerttemberg, Germany) 2025-09-12 [PMID: 40940307]

X Jiang, C Xu, H Shi, Q Cheng PTH1-34 improves bone healing by promoting angiogenesis and facilitating MSCs migration and differentiation in a stabilized fracture mouse model PLoS ONE, 2019-12-10;14(12):e0226163. 2019-12-10 [PMID: 31821371]

Oliveira H, Catros S, Boiziau C et al. The proangiogenic potential of a novel calcium releasing biomaterial: Impact on cell recruitment Acta Biomaterialia 2016-01-01 [PMID: 26441126]

Han X, Sun M, Chen B et al. Lotus seedpod-inspired internal vascularized 3D printed scaffold for bone tissue repair Bioactive Materials 2020-11-07 [PMID: 33313444]

Tian W, Hao H, Chu M et al. Berberine Suppresses Lung Metastasis of Cancer via Inhibiting Endothelial Transforming Growth Factor Beta Receptor 1 Frontiers in Pharmacology 2022-06-16 [PMID: 35784732]

Won S, Lee C, Bae S et al. Mass-produced gram-negative bacterial outer membrane vesicles activate cancer antigen-specific stem-like CD8(+) T cells which enables an effective combination immunotherapy with anti-PD-1 Journal of Extracellular Vesicles 2023-08-10 [PMID: 37563797]

Yan J, Yuan P, Gui L et al. CCL28 Downregulation Attenuates Pancreatic Cancer Progression Through Tumor Cell-Intrinsic and -Extrinsic Mechanisms Technol Cancer Res Treat 2021-12-23 [PMID: 34939465]

Jassim AH, Nsiah NY, Inman DM. Ocular Hypertension Results in Hypoxia within Glia and Neurons throughout the Visual Projection Antioxidants (Basel) 2022-04-29 [PMID: 35624752]

More publications at <http://www.novusbio.com/NB100-2284>



### **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 NB100-2284**

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NBP2-33376H	Blue Marker Antibody (6F4-F6) [HRP]
HAF008	Goat anti-Rabbit IgG Secondary Antibody [HRP]
NB7160	Goat anti-Rabbit IgG (H+L) Secondary Antibody [HRP]
NBP2-24891	Rabbit IgG Isotype Control

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### **Limitations**

This product is for research use only and is not approved for use in humans or in clinical diagnosis. Primary Antibodies are guaranteed for 1 year from date of receipt.

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