Product Datasheet

CD31/PECAM-1 Antibody
NB100-2284

Unit Size: 0.1 ml

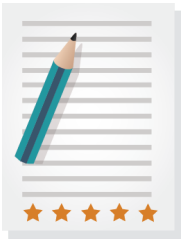
Store at 4C. Do not freeze.

www.novusbio.com technical@novusbio.com

Reviews: 6 Publications: 133

Protocols, Publications, Related Products, Reviews, Research Tools and Images at:
www.novusbio.com/NB100-2284

Updated 10/23/2024 v.20.1



NB100-2284

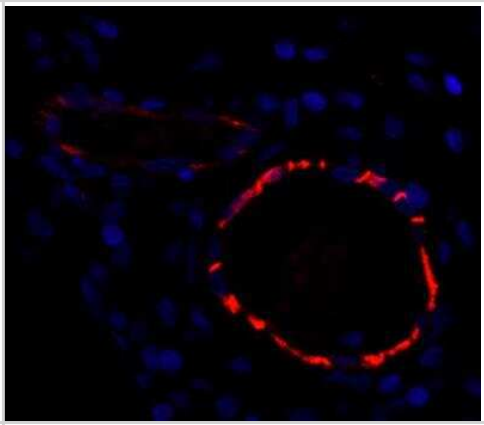
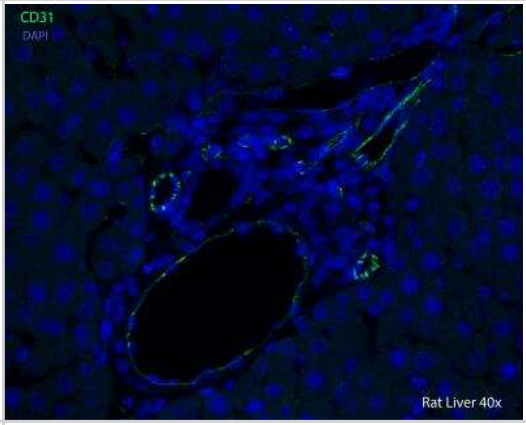
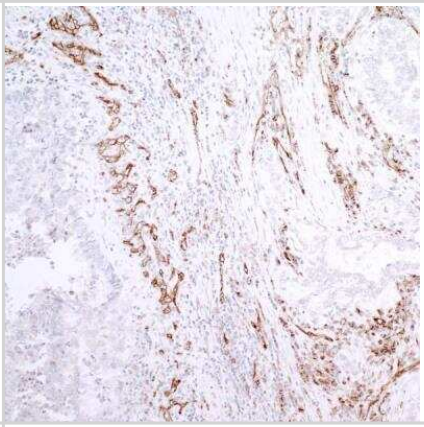
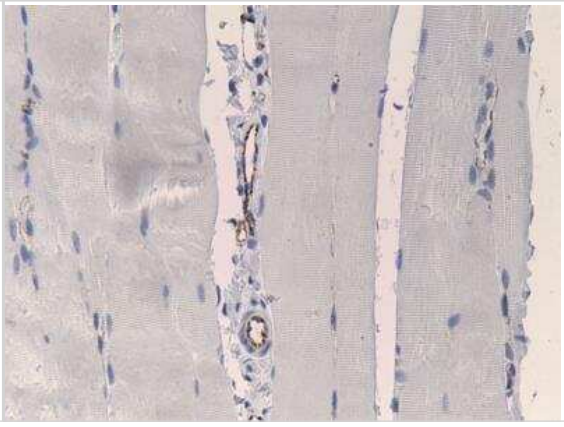
CD31/PECAM-1 Antibody

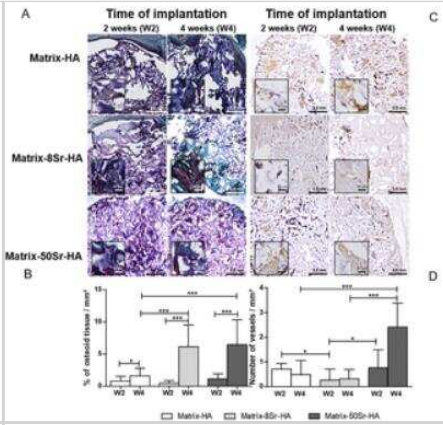
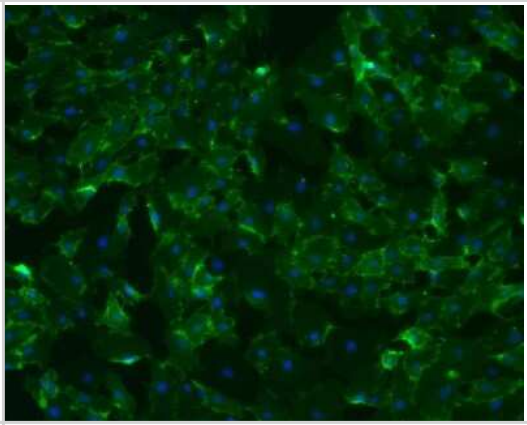
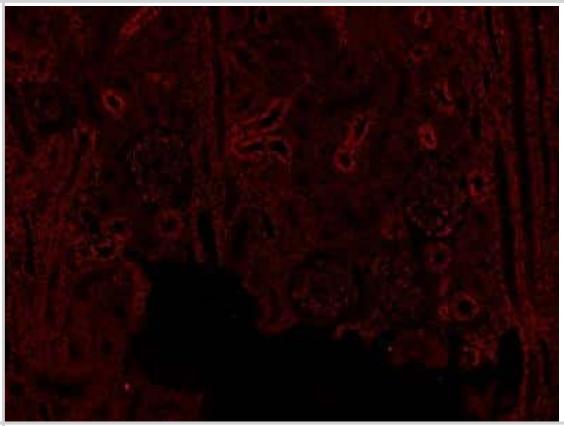
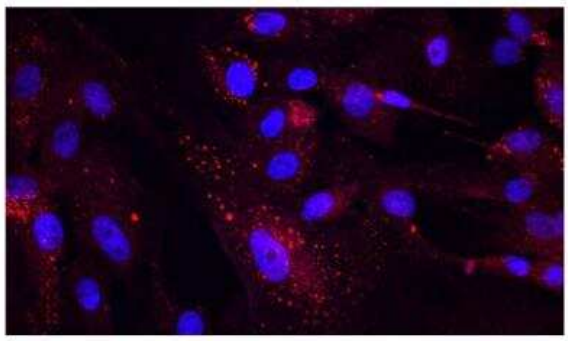
Product Information	
Unit Size	0.1 ml
Concentration	0.1 mg/ml
Storage	Store at 4C. Do not freeze.
Clonality	Polyclonal
Preservative	0.09% Sodium Azide
Isotype	IgG
Purity	Immunogen affinity purified
Buffer	TBS, 0.1% BSA
Target Molecular Weight	82.5 kDa

Product Description	
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).

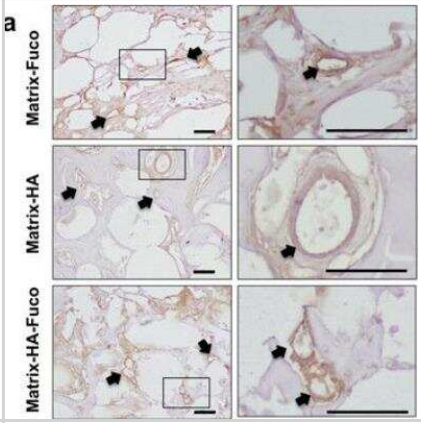
Product Application Details	
Applications	Western Blot, Immunocytochemistry/ Immunofluorescence, Immunohistochemistry, Immunohistochemistry-Frozen, Immunohistochemistry-Paraffin
Recommended Dilutions	Western Blot 1:100 - 1:2000, Immunohistochemistry 1:100 - 1:500, Immunocytochemistry/ Immunofluorescence 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

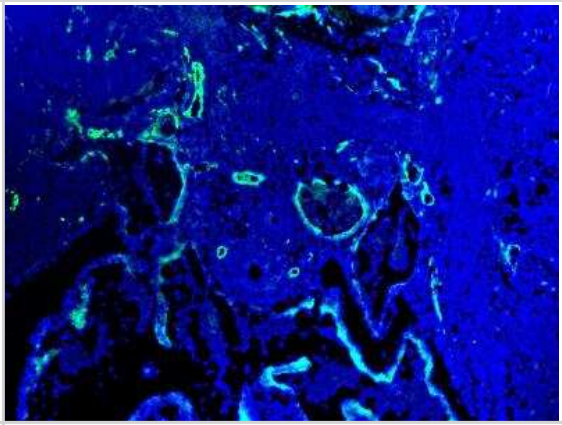
FFPE section of human breast carcinoma. Antibody: Affinity purified rabbit CD31/PECAM-1 Antibody (NB100-2284) used at a dilution of 1:100. Detection: Red-fluorescent goat anti-rabbit IgG-Hilyte PlusTM 555	
Staining of CD31/PECAM-1 in Rat Liver sample. IHC-P image submitted by a verified customer review.	
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 verifed 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.	

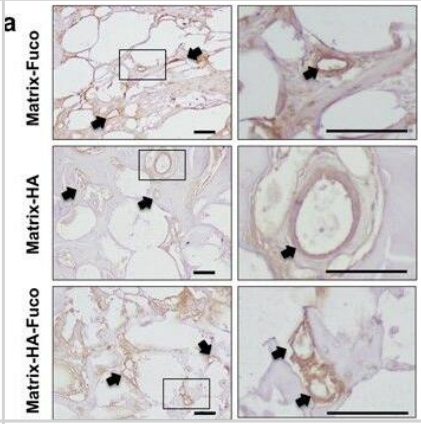
Immunohistochemistry evaluation of CD31/PECAM-1 expression. Representative images of CD31/PECAM-1 staining of vessels in the three groups of implanted matrices (scale bar = 100 um). Image collected and cropped by CiteAb from the following publication (https://www.nature.com/articles/s41598-017-06258-0)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



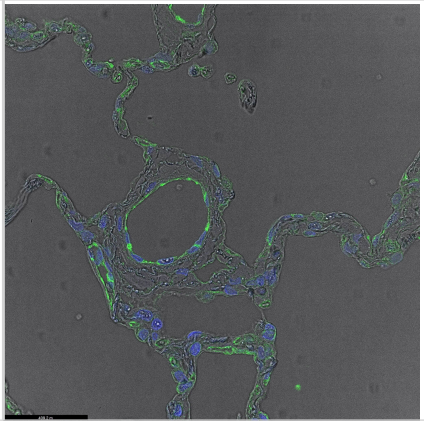
CD31 staining on E11.5 mouse Pharyngeal Mesoderm. Fixed with 4% PFA overnight. Blocked with 1% BSA. Primary antibody at 1:100. Secondary antibody at 1:1000, conjugated to Alexa Fluor 488. IHC-Fr image submitted by a verfied customer review.

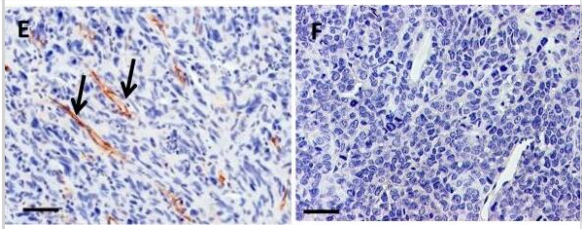
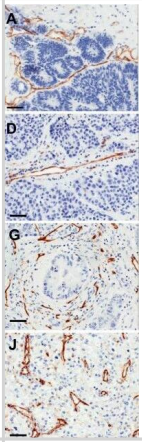
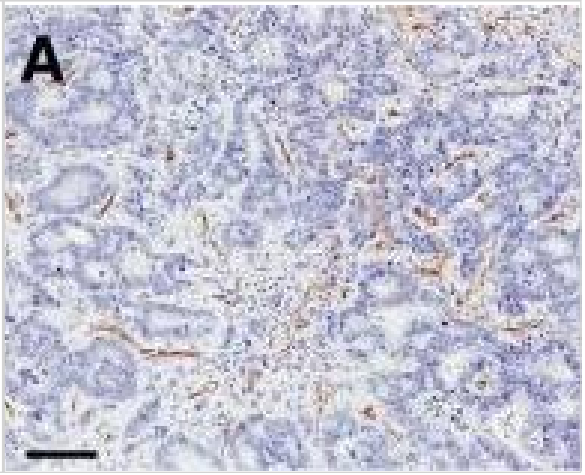


Immunohistochemistry evaluation of CD31 expression. (a) Representative images of CD31 staining of vessels in the three groups of implanted matrices (scale bar = 100 µm). (b) Quantification of vessel density inside the implanted matrices at 5 weeks post implantation (n = 6; Average ± SD). NS and **denote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

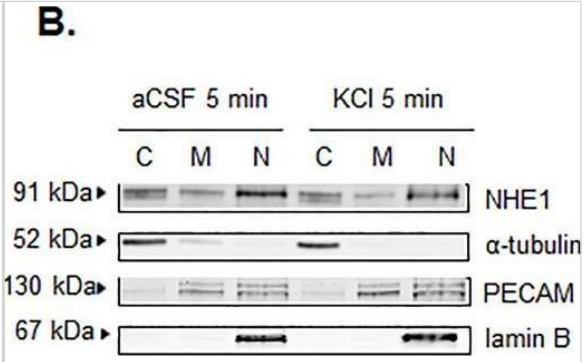


Immunohistochemistry: Rabbit Polyclonal CD31/PECAM-1 Antibody [NB100-2284] - Staining of CD31 in human lung tissue. Nuclei in blue and CD31 (vessel) in green. Mouse anti-CD31 (1:100, overnight incubation at +4°C), followed by donkey anti-mouse 488 (1:400, 3h at RT). Image from a verified customer review.

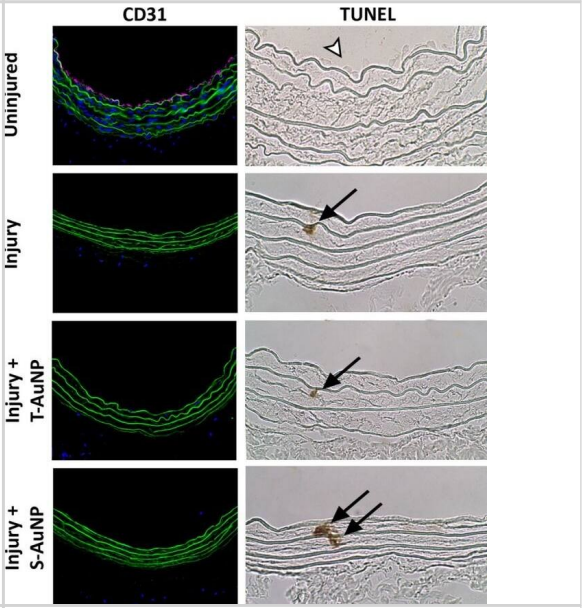


Immunohistochemistry: CD31/PECAM-1 Antibody [NB100-2284] - Antibodies selected for characterization of stromal cells & vasculature in FFPE specimens are species-specific. (A, B) Labeling of a patient colon tumor (A) & Colo205 human cell line xenograft (B) with anti-human mitochondrial antibody (single 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 µ). 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 µ). 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 µ). 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.	

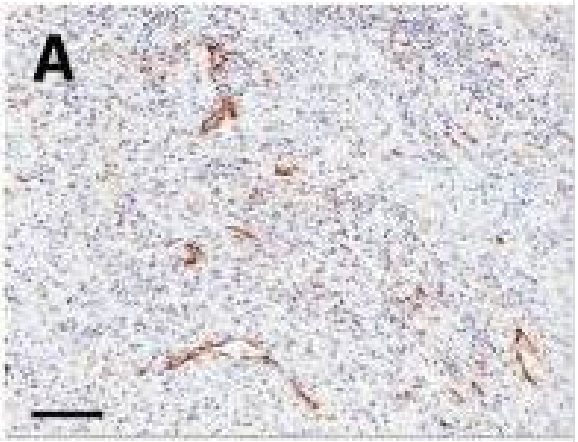
Western Blot: CD31/PECAM-1 Antibody [NB100-2284] - KCl pulse decreased membrane, but increased nuclear, detection of NHE1 in b.End3 endothelial cells.(A) Representative immunofluorescence images of bEnd.3 cells at two time-points after KCl or aCSF pulse. (B) Representative immunoblots of NHE1, α-tubulin, 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 ± SEM (n = 11–12). (C) Representative immunoblots indicating NHE1 & α-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 ± SEM (n = 6). (D) Representative immunoblots of NHE1 & α-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 ± SEM (n = 6). # denotes significantly different vs naïve ($p<0.01$), as assessed by one-way ANOVA (E) Intracellular pH during aCSF or KCl pulse. All data represent mean ± SEM (n = 45). (F) Extracellular pH during aCSF or KCl pulse. All data represent mean ± 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.



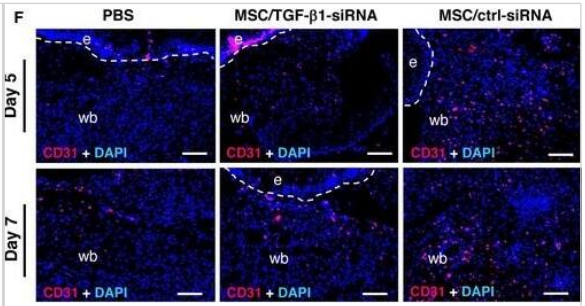
Immunocytochemistry/ Immunofluorescence: CD31/PECAM-1 Antibody [NB100-2284] - Impact of T□AuNPs on endothelial cells in vivo. Immunofluorescent staining for endothelial cells using an anti□CD 31 antibody revealed an intact endothelial cell monolayer in the uninjured control carotid artery (N = 3). As expected post balloon angioplasty, there is no endothelial cell monolayer of the injured left carotid arteries in the injury alone, injury + T□AuNP, & injury + S□AuNP treatment conditions. Green indicates autofluorescence of the elastic lamina. Magenta indicates endothelial cells. Images obtained using 25× 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□injured left carotid arteries, as expected. Black arrows indicate apoptotic cells. Representative images obtained using 40× 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 μ). 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□β1 released by MSCs contributes to induced myofibroblast differentiation & granulation tissue formationA–C2.5 × 105 of TGF□β1 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□β1 mRNA (A) at day 2 by qPCR, total TGF□β1 (B), & active TGF□β1 (C) protein at day 5 by ELISA. Data are expressed as mean ± SEM, n = 3 wounds per group, **P < 0.01, by one□way ANOVA with Tukey's test.D–GExpression of α□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 μm. Quantification data are expressed as mean ± 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.



Publications

Raphael Blain, Gérard Couly, Eimad Shotar, Joséphine Blévinal, Maryne Toupin, Anais Favre, Ali Abjaghou, Megumi Inoue, Edwin Hernández-Garzón, Frédéric Clarençon, Frédéric Chalmel, Séverine Mazaud-Guittot, Paolo Giacobini, Yorick Gitton, Alain Chédotal A tridimensional atlas of the developing human head Cell 2023-12-21 [PMID: 38070509]

Ikeda S, Sugioka S, Kimura T, Ashida N Smooth muscle protein 22 alpha-Cre recombination in resting cardiac fibroblasts and hematopoietic precursors Scientific reports 2022-07-07 [PMID: 35798848]

Elle Koivunotko, Raili Koivuniemi, Julia Monola, Riina Harjumäki, Chris S Pridgeon, Mari Madetoja, Jere Linden, Lauri Paasonen, Saara Laitinen, Marjo Yliperttula Cellulase-assisted platelet-rich plasma release from nanofibrillated cellulose hydrogel enhances wound healing. Journal of controlled release : official journal of the Controlled Release Society 2024-04-10 [PMID: 38423475]

Dawn Bannerman, Simon Pascual-Gil, Scott Campbell, Richard Jiang, Qinghua Wu, Sargol Okhovatian, Karl T. Wagner, Miles Montgomery, Michael A. Laflamme, Locke Davenport Huyer, Milica Radisic Itaconate and citrate releasing polymer attenuates foreign body response in biofabricated cardiac patches Materials Today Bio 2023-12-18 [PMID: 38234461]

Tavé van Zyl, Wenjun Yan, Alexi M. McAdams, Aboozar Monavarfeshani, Gregory S. Hageman, Joshua R. Sanes Cell atlas of the human ocular anterior segment: Tissue-specific and shared cell types Proceedings of the National Academy of Sciences of the United States of America 2022-07-15 [PMID: 35858321]

Shishkova, D;Lobov, A;Repkin, E;Markova, V;Markova, Y;Sinitskaya, A;Sinitsky, M;Kondratiev, E;Torgunakova, E;Kutikhin, A; Calciprotein Particles Induce Cellular Compartment-Specific Proteome Alterations in Human Arterial Endothelial Cells Journal of cardiovascular development and disease 2023-12-22 [PMID: 38248875]

Jaroslav Chlupac, Jan Frank, David Sedmera, Ondrej Fabian, Zuzana Simunkova, Iveta Mrazova, Tomas Novak, Zdenka Vanourková, Oldrich Benada, Zdenek Pulda, Theodor Adla, Martin Kveton, Alena Lodererova, Ludek Voska, Jan Pirk, Jiri Fronek, Alfredo Caturano External Support of Autologous Internal Jugular Vein Grafts with FRAME Mesh in a Porcine Carotid Artery Model Biomedicines 2024-06-16 [PMID: 38927542]

Amanda Wolf-Johnston, Youko Ikeda, Irina Zabbarova, Anthony J. Kanai, Sheldon Bastacky, Robert Moldwin, Joel N.H. Stern, Edwin K. Jackson, Lori A. Birder Purine nucleoside phosphorylase inhibition is an effective approach for the treatment of chemical hemorrhagic cystitis JCI Insight 2024-01-25 [PMID: 38271096]

Heikal L, Ghezzi P, Mengozzi M, Ferns G Assessment of HIF-1a expression and release following endothelial injury in-vitro and in-vivo. Mol Med 2018-05-16 [PMID: 30134815]

Kaitlin N. Allen, Julia María Torres-Velarde, Juan Manuel Vazquez, Diana D. Moreno-Santillán, Peter H. Sudmant, José Pablo Vázquez-Medina Hypoxia exposure blunts angiogenic signaling and upregulates the antioxidant system in endothelial cells derived from elephant seals BMC Biology 2024-04-23 [PMID: 38654271]

Nadia Houerbi, JangKeun Kim, Eliah G. Overbey, Richa Batra, Annalise Schweickart, Laura Patras, Serena Lucotti, Krista A. Ryon, Deena Najjar, Cem Meydan, Namita Damle, Christopher Chin, S. Anand Narayanan, Joseph W. Guarnieri, Gabrielle Widjaja, Afshin Beheshti, Gabriel Tobias, Fanny Vatter, Jeremy Wain Hirschberg, Ashley Kleinman, Evan E. Afshin, Matthew MacKay, Qiuying Chen, Dawson Miller, Aaron S. Gajadhar, Lucy Williamson, Purvi Tandel, Qiu Yang, Jessica Chu, Ryan Benz, Asim Siddiqui, Daniel Hornburg, Steven Gross, Bader Shirah, Jan Krumsiek, Jaime Mateus, Xiao Mao, Irina Matei, Christopher E. Mason Secretome profiling reveals acute changes in oxidative stress, brain homeostasis, and coagulation following short-duration spaceflight Nature Communications 2024-06-11 [PMID: 38862464]

Haba D, Ohmiya T, Sekino M et al. Efficacy of wearable vibration dressings on full-thickness wound healing in a hyperglycemic rat model Wound repair and regeneration : official publication of the Wound Healing Society [and] the European Tissue Repair Society 2023-11-11 [PMID: 37950849] (IHC-P, Rat)

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

HAF008	Goat anti-Rabbit IgG Secondary Antibody [HRP]
NB7160	Goat anti-Rabbit IgG (H+L) Secondary Antibody [HRP]
NBP2-24891	Rabbit IgG Isotype Control
NBP2-54655PEP	CD31/PECAM-1 Recombinant Protein Antigen

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.

For more information on our 100% guarantee, please visit www.novusbio.com/guarantee

Earn gift cards/discounts by submitting a review: www.novusbio.com/reviews/submit/NB100-2284

Earn gift cards/discounts by submitting a publication using this product: www.novusbio.com/publications