

Product Datasheet

Collagen III alpha 1/COL3A1 Antibody NB600-594

Unit Size: 0.1 mg

Store at 4C short term. For extended storage, add an equal volume of glycerol, aliquot and store at -20C or below. Avoid repeated freeze-thaw cycles.

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NB600-594

Collagen III alpha 1/COL3A1 Antibody

Product Information	
Unit Size	0.1 mg
Concentration	Please see the vial label for concentration. If unlisted please contact technical services.
Storage	Store at 4C short term. For extended storage, add an equal volume of glycerol, aliquot and store at -20C or below. Avoid repeated freeze-thaw cycles.
Clonality	Polyclonal
Preservative	0.01% Sodium Azide
Isotype	IgG
Purity	Immunogen affinity purified
Buffer	0.02 M Potassium Phosphate, 0.15 M Sodium Chloride, pH 7.2
Product Description	
Description	<p>This antibody has been prepared by immunoaffinity chromatography using immobilized antigens followed by extensive cross-adsorption against other collagens, human serum proteins and non-collagen extracellular matrix proteins to remove any unwanted specificities. Some class-specific anti-collagens may be specific for three-dimensional epitopes which may result in diminished reactivity with denatured collagen or formalin-fixed, paraffin embedded tissues.</p> <p>Store vial at 4C prior to opening. This product is stable at 4C as an undiluted liquid. Dilute only prior to immediate use. For extended storage, mix with an equal volume of glycerol, aliquot contents and freeze at -20C or below. Avoid cycles of freezing and thawing.</p>
Host	Rabbit
Gene ID	1281
Gene Symbol	COL3A1
Species	Human, Mouse, Rat, Bovine, Feline, Sheep
Reactivity Notes	<p>This antibody reacts with most mammalian Collagen III alpha 1/COL3A1 and has expected cross-reactivity with Type I and negligible cross reactivity with Type II, IV, V or VI collagens.

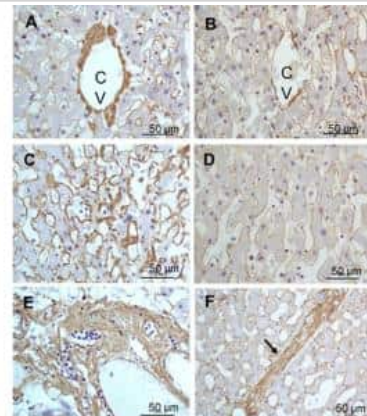
Use in Sheep reported in scientific literature (PMID:34451177)

Mouse reactivity reported in multiple pieces of scientific literature.
Rat reactivity reported in scientific literature (PMID: 23370982)
Feline reactivity reported in scientific literature (PMID: 33091431)</p>
Specificity/Sensitivity	Some class-specific anti-collagens may be specific for three-dimensional epitopes which may result in diminished reactivity with denatured collagen or formalin-fixed, paraffin embedded tissues. This antibody reacts with most mammalian Collagen III alpha 1/COL3A1 and has expected cross-reactivity with Type I and negligible cross reactivity with Type II, IV, V or VI collagens. Non-specific cross-reaction of anti-collagen antibodies with other human serum proteins or non-collagen extracellular matrix proteins has not been tested.
Immunogen	Collagen III alpha 1/COL3A1 from human and bovine placenta (Uniprot: P02461)
Product Application Details	
Applications	Western Blot, Simple Western, ELISA, Flow Cytometry, Immunocytochemistry/Immunofluorescence, Immunohistochemistry, Immunohistochemistry-Paraffin, Immunoprecipitation

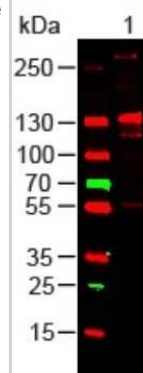
Recommended Dilutions	Western Blot 1:1000-1:10000, Simple Western, Flow Cytometry, ELISA 1:5000-1:50000, Immunohistochemistry 1:50-1:200, Immunocytochemistry/Immunofluorescence 1:10 - 1:500, Immunoprecipitation 1:100, Immunohistochemistry-Paraffin 1:50 - 1:200
Application Notes	<p>This product has been tested by dot Blot, western blot, and IHC and is useful for indirect trapping ELISA for quantitation of antigen in serum using a standard curve, immunoprecipitation, native (non-denaturing, non-dissociating) PAGE, immunohistochemistry, and western blotting for highly sensitive qualitative analysis.</p> <p>Simple Western reported by an internal validation. Separated by Size-All, antibody dilution of 1:50. Apparent MW in kDa on Simple Western was 139 kDa; matrix was 12-230 kDa.</p>

Images

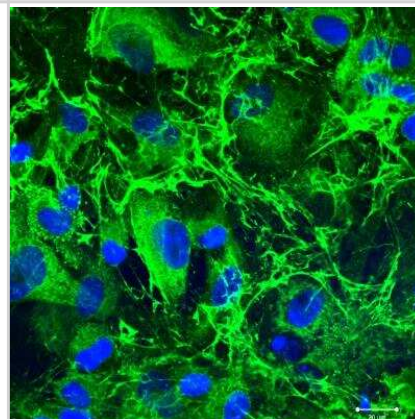
Immunohistochemistry: Collagen III alpha 1/COL3A1 Antibody [NB600-594] - Tissue: right lobe of the liver section. A: Central Vein (CV) fibrosis, B: Non-fibrotic CV, C: Perisinusoidal fibrosis, D: Non-fibrotic area, E: Protat tract fibrosis, F: Septal fibrosis (arrow). Fixation: FFPE. Antigen retrieval: not required. Primary antibody: Anti-collagen type I at 1:500 for 4 degrees Celsius for 24hr. Secondary antibody: Peroxidase biotin-streptavidin rabbit secondary antibody at 1:10,000 for 45 min at RT. Localization: Anti-collagen type III is intra and extracellular. Staining: 3,3'-diaminobenzidine tetrahydrochloride was used as the chromogen. Nuclei were counterstained purple with hematoxylin.



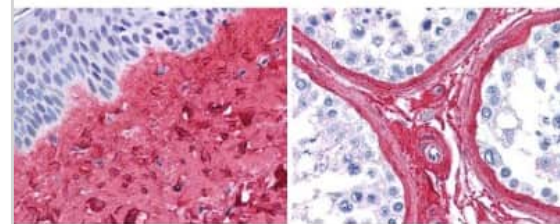
Western Blot: Collagen III alpha 1/COL3A1 Antibody [NB600-594] - Lane 1: Human Collagen III Load: 100 ng per lane Primary antibody: Collagen III Antibody at 1:1000 o/n at 4C Secondary antibody: DyLight 649 Goat anti-rabbit at 1:20,000 for 30 min at RT Block: incubated with blocking buffer for 30 min at RT Predicted/Observed size: 138 kDa/138 kDa.



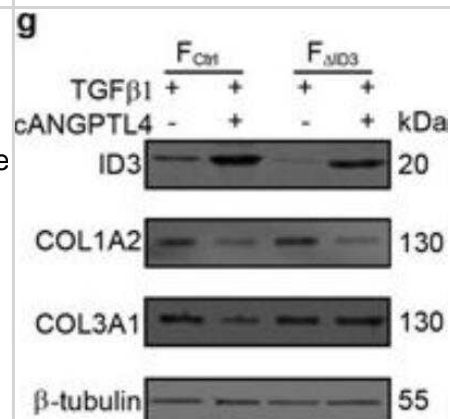
Immunocytochemistry/Immunofluorescence: Collagen III alpha 1/COL3A1 Antibody [NB600-594] - Human primary ventricular cardiac fibroblasts were stained with anti-Collagen III antibody. Cells were cultured for 3 days in DMEM with 10% fetal calf serum. ICC/IF image submitted by a verified customer review.



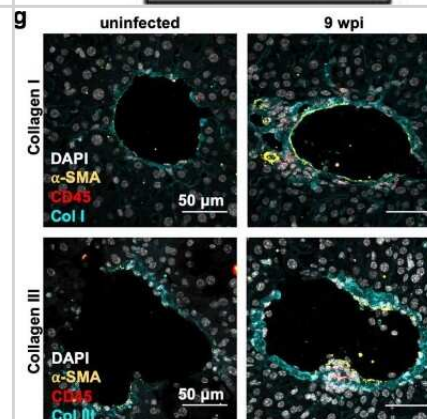
Immunohistochemistry: Collagen III alpha 1/COL3A1 Antibody [NB600-594] - Staining in FFPE sections of human skin(left, dermis) with moderate to strong red staining and testis (right) where strong staining was observed within connective tissue between seminiferous tubules. The antibody showed strong extracellular staining within connective tissues across many organs with minimal background staining. Slides were steamed in 0.01 M sodium citrate buffer, pH 6.0 at 99-100C. 20 minutes for antigen retrieval.



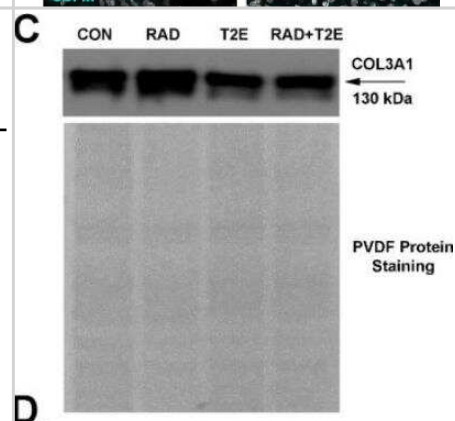
Western Blot: Collagen III alpha 1/COL3A1 Antibody [NB600-594] - Immunodetection of ID3, COL1A2 and COL3A1 in human dermal fibroblasts subjected to treatment with or without cANGPTL4 (12 ug/mL) in the presence of TGFB1 (10 ng/mL). B-tubulin, as loading control, was from the same samples. Image collected and cropped by CiteAb from the following publication (www.nature.com/articles/s41598-017-05869-x) licensed under a CC-BY license.



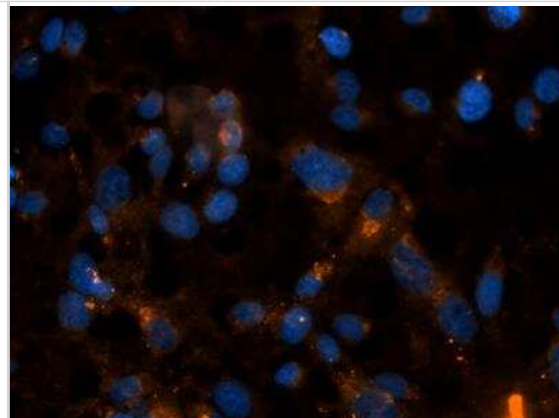
Immunohistochemistry: Collagen III alpha 1/COL3A1 Antibody [NB600-594] - Livers were harvested at 9 wpi, formalin-fixed, and then cryosectioned and stained for markers of inflammation and liver fibrosis. Maximum intensity projections of 12-17 um thick liver sections with immunofluorescently labeled nuclei (DAPI white) alpha-smooth muscle actin NBP2-34760APC (yellow), CD45 (red) and Collagen I NB600-408 (top) or Collagen III/COL3A1 NB600-594 (bottom) (blue) in the liver of uninfected or 9 wpi WT mice. Scale bars represent 50 um. Image collected and cropped by CiteAb from the following publication (<http://pubmed.ncbi.nlm.nih.gov/32973293/>) licensed under a CC-BY license.



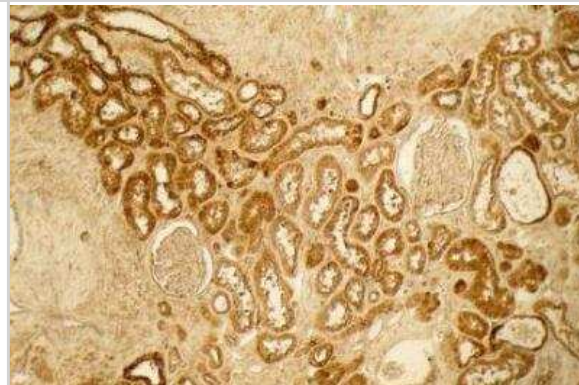
Western Blot: Collagen III alpha 1/COL3A1 Antibody [NB600-594] - Western blot for COL3A1 protein with PVDF protein staining to control for protein loading. Image collected and cropped by CiteAb from the following publication (mdpi.com/2076-3921/6/4/87), licensed under a CC-BY license.



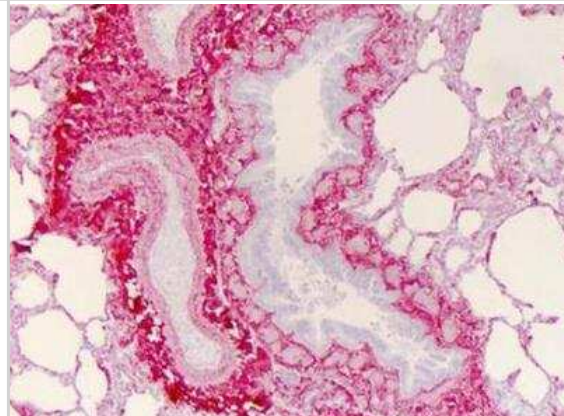
Immunocytochemistry/Immunofluorescence: Collagen III alpha 1/COL3A1 Antibody [NB600-594] - Collagen III alpha 1 expression in HT-1080 cells. ICC/IF image submitted by a verified customer review.



Immunohistochemistry-Paraffin: Collagen III alpha 1/COL3A1 Antibody [NB600-594] - Human lung tissue.



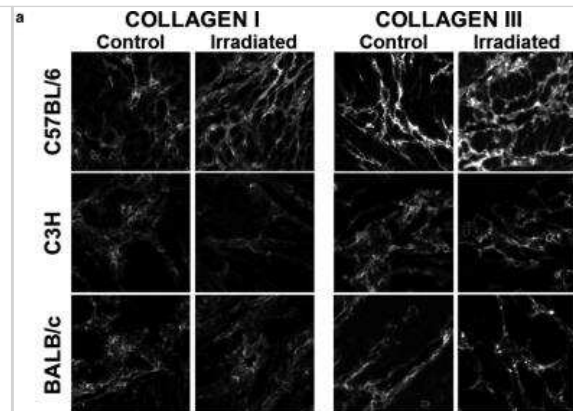
Immunohistochemistry-Paraffin: Collagen III alpha 1/COL3A1 Antibody [NB600-594] - Human lung tissue



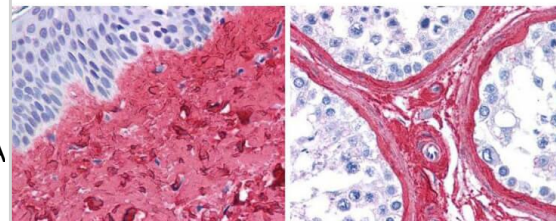
Immunohistochemistry: Collagen III alpha 1/COL3A1 Antibody [NB600-594] - Collagen III (k, positive staining indicated by arrows) immunohistochemistry staining in 13 weeks old male offspring. Left panel = Sham, Middle panel = SE (cigarette smoke exposure), Right panel = SE+MQ (SE with MitoQ supplementation) bar = 50 um. Image collected and cropped by CiteAb from the following publication (mdpi.com/2072-6643/11/7/1669) licensed under a CC-BY license.



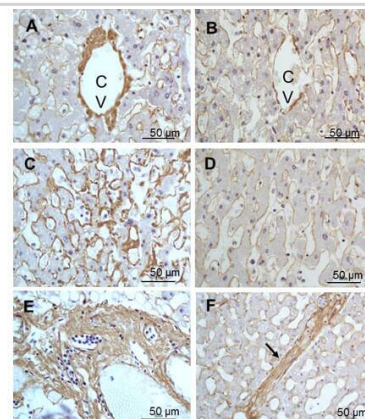
Immunohistochemistry: Collagen III alpha 1/COL3A1 Antibody [NB600-594] - Collagen I and collagen III accumulate in C57BL/6 mice in response to radiation. Bladder strips from irradiated and control mice were stained for collagen I or for collagen III and imaged using fluorescent microscopy. (a) Representative images (100 x 100 μm) of each mouse strain and treatment group are provided for collagen I and collagen III immunofluorescence. Collagen I antibody (NB600-450, RRID:AB_522923) and Collagen III antibody (NB600-594, RRID:AB_10001330). Image collected and cropped by CiteAb from the following publication (onlinelibrary.wiley.com/doi/abs/10.14814/phy2.14377) licensed under a CC-BY license.



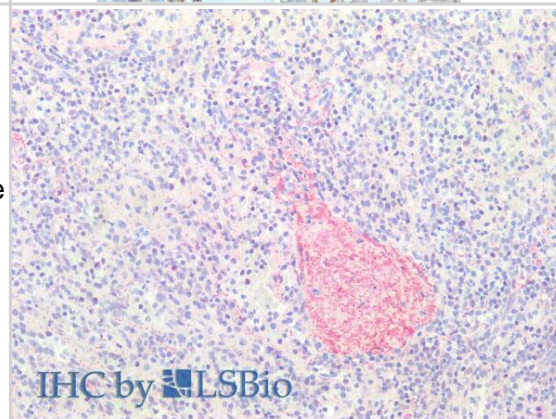
anti collagen III antibody (Lot 26016, 1:400, 45 min RT) showed strong staining in FFPE sections of human skin(left, dermis) with moderate to strong red staining and testis (right) where strong staining was observed within connective tissue between seminiferous tubules. The antibody showed strong extracellular staining within connective tissues across many organs with minimal background staining. Slides were steamed in 0.01 M sodium citrate buffer, pH 6.0 at 99-100C - 20 minutes for antigen retrieval. Images provided courtesy of LifeSpan Biosciences, Seattle, WA



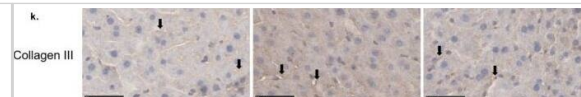
Immunohistochemistry of Rabbit Anti-collagen type III antibody. Tissue: right lobe of the liver section. A:Central Vein (CV) fibrosis, B: Non-fibrotic CV, C: Perisinusoidal fibrosis, D: Non-fibrotic area, E: Protat tract fibrosis, F: Septal fibrosis (arrow). Fixation: formalin fixed paraffin embedded. Antigen retrieval: not required. Primary antibody: Anti-collagen type III at 1:500 for 4C for 24hr. Secondary antibody: Peroxidase biotin-streptavidin rabbit secondary antibody at 1:10,000 for 45 min at RT. Localization: Anti-collagen type III is intra and extracellular. Staining: 3,3'-diaminobenzidine tetrahydrochloride was used as the chromogen. Nuclei were counterstained purple with hematoxylin.



Immunohistochemistry of Rabbit Collagen III alpha 1/COL3A1 Antibody. Tissue: FFPE normal human spleen tissues (10X). Antigen Retrieval: 0.01 M sodium citrate buffer for 20 minutes. Primary Antibody: Anti-Collagen Type III at 5 $\mu\text{L}/\text{mL}$ for 45 mins at RT. Staining: Anti-Rabbit biotinylated secondary antibody for 30 min at RT. Alkaline phosphatase streptavidin for 30 min at RT. Alkaline phosphatase chromogen substrate for 30 min at RT. The stained slides were evaluated by a pathologist to confirm staining specificity.

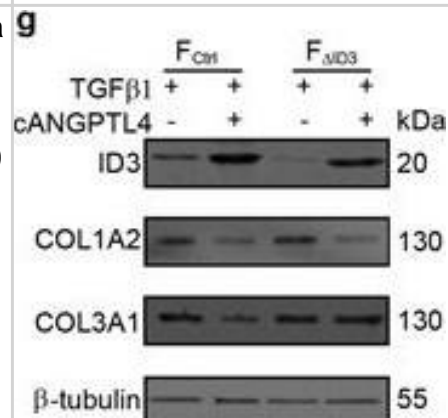


Markers of liver inflammation TNF-alpha, IL-1beta (a,b), macrophage markers MCP-1, CD68 and F4/80 (c-e), stellate cell activation marker alpha-SMA (f) and fibrous deposition of collagen 1a1, collagen III, and total collagen (g-i) in 13 weeks old male offspring. Results are expressed as mean +/- SEM (n = 4-8). * p < 0.05, ** p < 0.01. Representative images of hepatic CD68 (j, positive staining indicated by arrows) and collagen III (k, positive staining indicated by arrows)

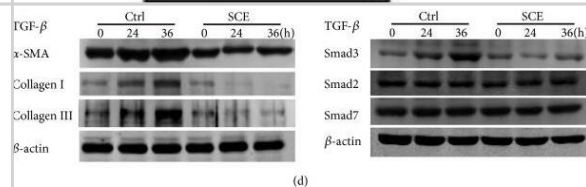


immunohistochemistry staining in 13 weeks old male offspring, bar = 50 um. (l) Representative images of SHG showing total collagen staining after gamma correction (collagen is green/yellow), bar = 1000 um. alpha-SMA: alpha-smooth muscle actin, CD68: cluster of differentiation 68, F4/80: EGF-like module-containing mucin-like hormone receptor-like 1, IL-1beta: interleukin 1 beta, MCP-1: monocyte chemoattractant protein 1, SE: cigarette smoke exposure, SE + MQ: SE with MitoQ supplementation, SHG: second harmonic generation, TNF-alpha: tumour necrosis factor-alpha. Image collected and cropped by CiteAb from the following publication (<https://pubmed.ncbi.nlm.nih.gov/31330878>), licensed under a CC-BY licence.

cANGPTL4 regulates COL1A2 and COL3A1 expression in fibroblasts via a bHLH-dependent signaling mechanism. (g-i) Immunodetection of ID3, COL1A2 and COL3A1 in human dermal fibroblasts subjected to the indicated treatments. Image collected and cropped by CiteAb from the following publication (<https://www.nature.com/articles/s41598-017-05869-x>), licensed under a CC-BY licence.



Tlk1-deficiency in mESCs causes a delay in the downregulation of core pluripotency factors upon differentiation. (A,C and E) Representative immunoblotting images showing Tlk1, Oct4, Sox2, and Nanog levels in Tlk1-KD cells upon differentiation. Differentiation was induced three different ways as previously described in Fig. 3. Alpha-tubulin was used as the loading control. (B,D and F) Quantification of the relative expression of the target proteins in panels (A,C, and E). The target proteins levels were normalized to that of α-tubulin. The protein expression levels of shLuc KD cells were normalized to 1. The biological data are presented as mean (n = 4) ± SEM for LIF- and EB and for RA (n = 3). *P < 0.05, **P < 0.01, and ***P < 0.001. (G) Immunofluorescence analysis of Oct4, Nanog and Tlk1 in control (shLuc) and Tlk1-deficient mESCs. Scale bars represent 100 μm. Image collected and cropped by CiteAb from the following open publication (<https://pubmed.ncbi.nlm.nih.gov/29321513>), licensed under a CC-BY license. Not internally tested by Novus Biologicals.



Publications

Ito A, Ohnuki Y, Suita K et al. Effects of the angiotensin-converting enzyme inhibitor captopril on occlusal-disharmony-induced cardiac dysfunction in mice Scientific reports 2023-11-15 [PMID: 37968296] (WB, Mouse)

Details:

1:1000 dilution

Madison J, Wilhelm K, Meehan DT et al. Glomerular basement membrane deposition of collagen $\alpha 1(\text{III})$ in Alport glomeruli by mesangial filopodia injures podocytes via aberrant signaling through DDR1 and integrin $\alpha 2\beta 1$ The Journal of Pathology 2022-09-01 [PMID: 35607980]

Lam YY, Chan CH, Geng L et al. APLNR marks a cardiac progenitor derived with human induced pluripotent stem cells Heliyon 2023-07-13 [PMID: 37539315] (ICC/IF)

Antonova L, Kutikhin A, Sevostianova V et al. Controlled and Synchronised Vascular Regeneration upon the Implantation of Iloprost- and Cationic Amphiphilic Drugs-Conjugated Tissue-Engineered Vascular Grafts into the Ovine Carotid Artery: A Proteomics-Empowered Study Polymers (Basel) 2022-11-26 [PMID: 36501545] (B/N)

Hernández-Bule ML, Toledano-Macías E, Pérez-González LA et al. Anti-Fibrotic Effects of RF Electric Currents International journal of molecular sciences 2023-07-01 [PMID: 37446165] (ICC/IF)

Ha H, Lee CH, Lee KS et al. Shape-Configurable Mesh for Hernia Repair by Synchronizing Anisotropic Body Motion Small (Weinheim an der Bergstrasse, Germany) 2023-07-25 [PMID: 37490554] (IHC, Rat)

Wu X, Zhang D, Qiao X et al. Regulating the cell shift of endothelial cell-like myofibroblasts in pulmonary fibrosis The European respiratory journal 2023-06-01 [PMID: 36758986] (WB, Mouse)

Zhao T, Chu Z, Chu C et al. Macrophages induce gingival destruction via Piezo1-mediated MMPs-degrading collagens in periodontitis Frontiers in Immunology 2023-05-16 [PMID: 37261355] (ICC/IF, Human, Mouse)

Details:

Dilution: 1:100

Su CY, Liu TY, Wang HV, Yang WC Histopathological Study on Collagen in Full-Thickness Wound Healing in Fraser's Dolphins (*Lagenodelphis hosei*) Animals : an open access journal from MDPI 2023-05-18 [PMID: 37238111] (IHC-P, Mammal)

Details:

1:200 IHC-P dilution. Dolpin is the species

Antonova LV, Sevostianova VV, Silnikov VN et al. Comparison of the Patency and Regenerative Potential of Biodegradable Vascular Prostheses of Different Polymer Compositions in an Ovine Model International journal of molecular sciences 2023-05-10 [PMID: 37239889] (IHC-Fr, Sheep)

Lam Y, Chan C, Geng L et al. APLNR marks a cardiac progenitor derived with human induced pluripotent stem cells bioRxiv 2023-02-23 (ICC/IF, Human)

Latif A, Fisher LE, Dundas AA et al. Microparticles Decorated with Cell-Instructive Surface Chemistries Actively Promote Wound Healing Advanced materials (Deerfield Beach, Fla.) 2022-11-28 [PMID: 36440539] (IHC-P, Human)

More publications at <http://www.novusbio.com/NB600-594>





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Products Related to NB600-594

HAF008	Goat anti-Rabbit IgG Secondary Antibody [HRP]
NB7160	Goat anti-Rabbit IgG (H+L) Secondary Antibody [HRP]
NBP2-24891	Rabbit IgG Isotype Control
NBP1-97267	Collagen III alpha 1/COL3A1 Native Protein

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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