Product Datasheet

Collagen III alpha 1/COL3A1 Antibody - BSA Free
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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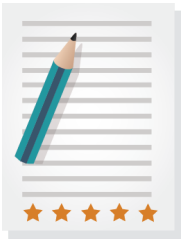
Updated 2/21/2025 v.20.1



NB600-594

Collagen III alpha 1/COL3A1 Antibody - BSA Free

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	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. 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.
Host	Rabbit
Gene ID	1281
Gene Symbol	COL3A1
Species	Human, Mouse, Rat, Bovine, Feline, Sheep
Reactivity Notes	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)
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)

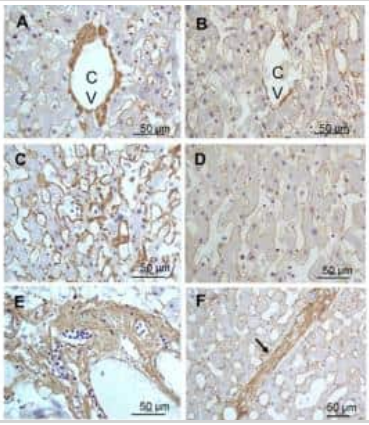
Product Application Details

Applications	Western Blot, Simple Western, ELISA, Flow Cytometry, Immunocytochemistry/ Immunofluorescence, Immunohistochemistry, Immunohistochemistry-Paraffin, Immunoprecipitation

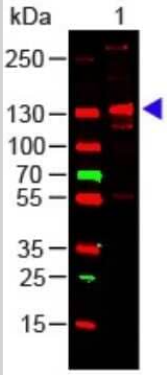
Recommended Dilutions	Western Blot 1:1000-1:10000, Simple Western, Flow Cytometry, ELISA 1:5000-1:50000, Immunohistochemistry 1:50-1:200, Immunocytochemistry/ Immunofluorescence 1:10 - 1:500, Immunoprecipitation 1:100, Immunohistochemistry-Paraffin 1:50 - 1:200
Application Notes	This product has been 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. See Simple Western Antibody Database for Simple Western validation: tested in skin; antibody dilution of 1:50; separated by size; detects a band at 139 kDa

Images

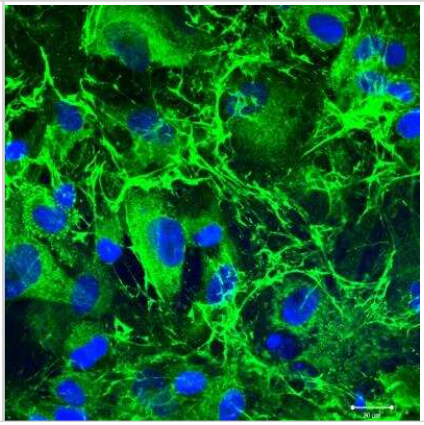
Immunohistochemistry: Collagen III alpha 1/COL3A1 Antibody [NB600-594] - Tissue: right lobe of the liver section. A:Central Vein (CV) fibrosis, B: Non-fibrotic CV, C: Perisinusodial fibrosis, D: Non-fibrotic area, E: Protat tract fibrosis, F: Septal fibrosis (arrow). Fixation: FFPE. Antigen retrieval: 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.



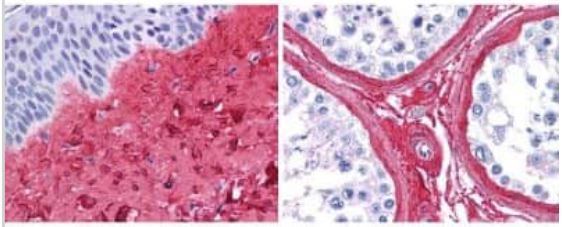
Western Blot: Collagen III alpha 1/COL3A1 Antibody [NB600-594] - Lane 1: Human Collagen III Load: 100 ng per lane Primary antibody: Collagen III Antibody at 1:1000 o/n at 4C Secondary antibody: DyLight 649 Goat anti-rabbit at 1:20,000 for 30 min at RT Block: incubated with blocking buffer for 30 min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



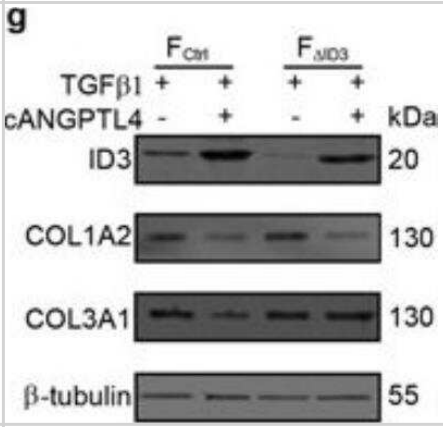
Immunocytochemistry/Immunofluorescence: Collagen III alpha 1/COL3A1 Antibody [NB600-594] - Human primary ventricular cardiac fibroblasts were stained with anti-Collagen III antibody. Cells were cultured for 3 days in DMEM with 10% fetal calf serum. ICC/IF image submitted by a verified customer review.



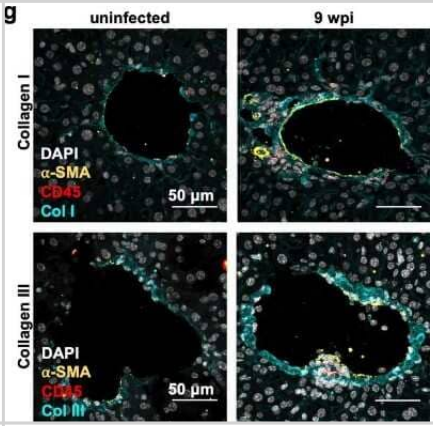
Immunohistochemistry: Collagen III alpha 1/COL3A1 Antibody [NB600-594] - Staining in FFPE sections of human skin(left, dermis) with moderate to strong red staining and testis (right) where strong staining was observed within connective tissue between seminiferous tubules. The antibody showed strong extracellular 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.



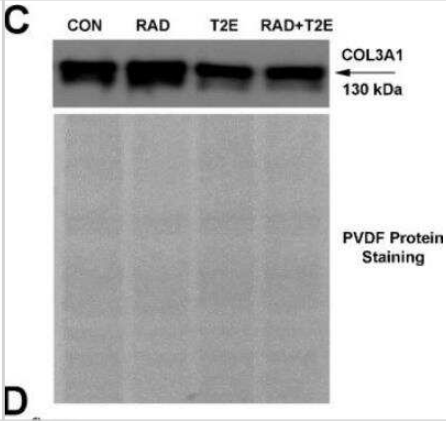
Western Blot: Collagen III alpha 1/COL3A1 Antibody [NB600-594] - Immunodetection of ID3, COL1A2 and COL3A1 in human dermal fibroblasts subjected to treatment with or without cANGPTL4 (12 ug/mL) in the presence of TGFB1 (10 ng/mL). B-tubulin, as loading control, was from the same samples. Image collected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



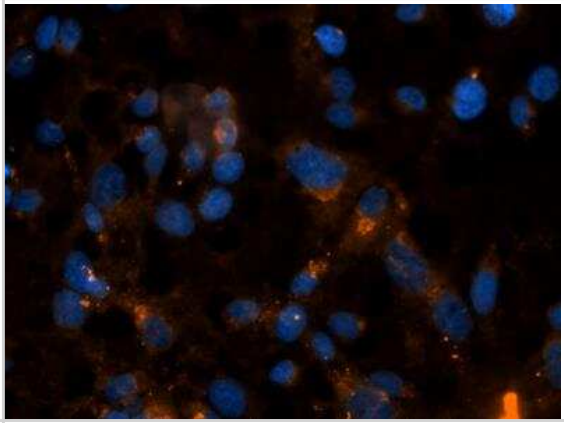
Immunohistochemistry: Collagen III alpha 1/COL3A1 Antibody [NB600-594] - Livers were harvested at 9 wpi, formalin-fixed, and then cryosectioned and stained for markers of inflammation and liver fibrosis. Maximum intensity projections of 12-17 um thick liver sections with immunofluorescently labeled nuclei (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 (//pubmed.ncbi.nlm.nih.gov/32973293/) licensed under a CC-BY license.



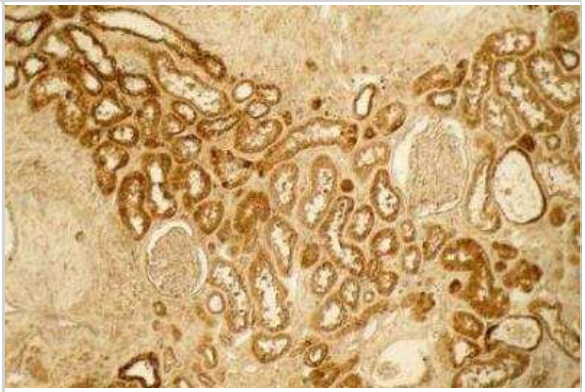
Western Blot: Collagen III alpha 1/COL3A1 Antibody [NB600-594] - Western blot for COL3A1 protein with PVDF protein staining to control for protein loading. Image collected and cropped by CiteAb from the following publication (mdpi.com/2076-3921/6/4/87), licensed under a CC-BY license.



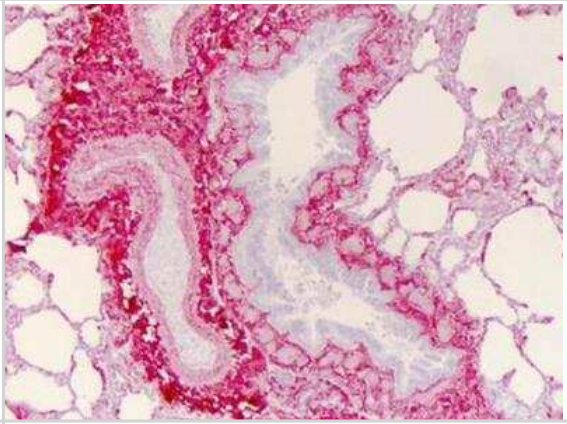
Immunocytochemistry/Immunofluorescence: Collagen III alpha 1/COL3A1 Antibody [NB600-594] - Collagen III alpha 1 expression in HT-1080 cells. ICC/IF image submitted by a verified customer review.



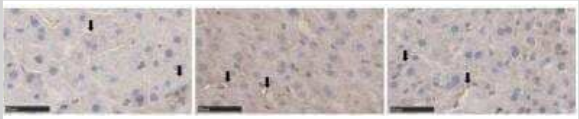
Immunohistochemistry-Paraffin: Collagen III alpha 1/COL3A1 Antibody [NB600-594] - Human lung tissue.



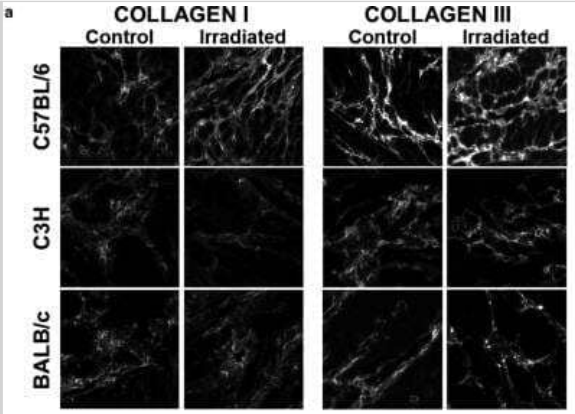
Immunohistochemistry-Paraffin: Collagen III alpha 1/COL3A1 Antibody [NB600-594] - Human lung tissue



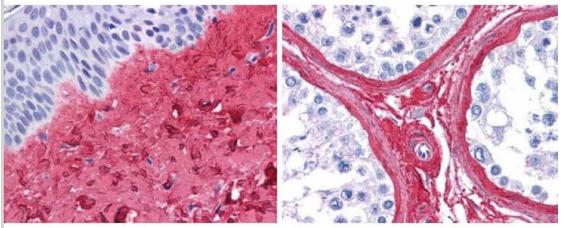
Immunohistochemistry: Collagen III alpha 1/COL3A1 Antibody [NB600-594] - Collagen III (k, positive staining indicated by arrows) immunohistochemistry staining in 13 weeks old male offspring. Left panel = Sham, Middle panel = SE (cigarette smoke exposure), Right panel = SE+MQ (SE with MitoQ supplementation) 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.



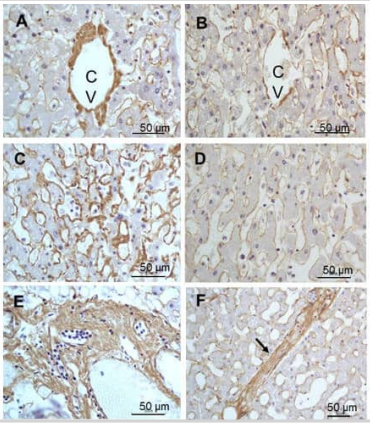
Immunohistochemistry: Collagen III alpha 1/COL3A1 Antibody [NB600-594] - Collagen I and collagen III accumulate in C57BL/6 mice in response to radiation. Bladder strips from irradiated and control mice were stained for collagen I or for collagen III and imaged using fluorescent microscopy. (a) Representative images (100 x 100 um) 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.



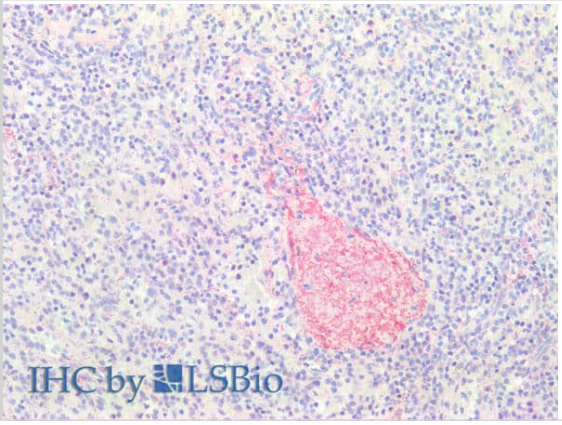
anti collagen III antibody (Lot 26016, 1:400, 45 min RT) showed strong staining in FFPE sections of human skin(left, dermis) with moderate to strong red staining and testis (right) where strong staining was observed within connective tissue between seminiferous tubules. The antibody showed strong extracellular 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



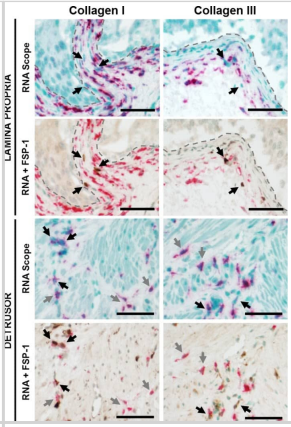
Immunohistochemistry of Rabbit Anti-collagen type III antibody. Tissue: right lobe of the liver section. A:Central Vein (CV) fibrosis, B: Non-fibrotic CV, C: Perisinusodial fibrosis, D: Non-fibrotic area, E: Protat tract fibrosis, F: Septal fibrosis (arrow). Fixation: formalin fixed paraffin embedded. 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.



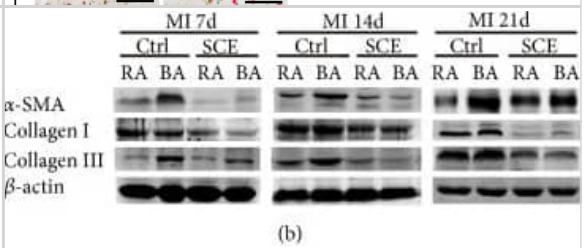
Immunohistochemistry of Rabbit Collagen III alpha 1/COL3A1 Antibody. Tissue: FFPE normal human spleen tissues (10X). Antigen Retrieval: 0.01 M sodium citrate buffer for 20 minutes. Primary Antibody: Anti-Collagen Type III at 5uL/mL for 45 mins at RT. Staining: Anti-Rabbit biotinylated secondary antibody 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.



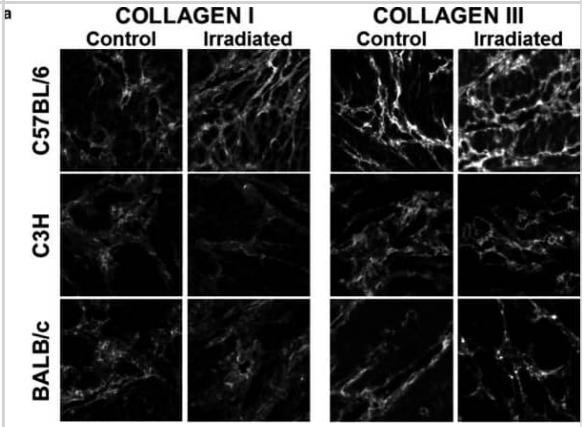
FSP□1–positive cells only partially responsible for collagen I & III production in irradiated bladders. Bladder strips from irradiated mice were costained for collagen I or for collagen III mRNA (pink) & for fibroblasts (FSP□1, brown). U: urothelium; LP: lamina propria. Black arrow: FSP□1 positive cells. Gray arrow: collagen only positive cells. Scale bar = 50 µm Image collected & cropped by CiteAb from the following publication (https://pubmed.ncbi.nlm.nih.gov/32109348), licensed under a CC-BY license. Not internally tested by Novus Biologicals.



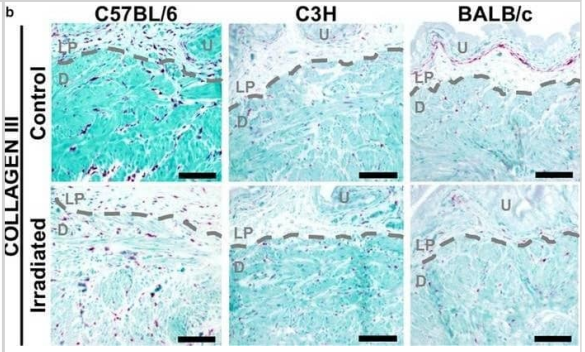
Western Blot: Collagen III alpha 1/COL3A1 Antibody [NB600-594] - SCE attenuates myocardial fibrosis in heart tissue after MI. (a) RT-qPCR analysis for mRNA expression of collagen type I alpha 1 (Col1a1), collagen type III alpha 1 (Col3a1), actin, alpha 2 smooth muscle (Acta2), Mmp2, & Mmp9 in the border area (BA) & remote area (RA) 7 days, 14 days, & 21 days after MI. (b) Immunoblot analysis of protein expressions of α-SMA, collagen I, & collagen III in RA & BA in the heart tissues 7 days, 14 days, & 21 days after MI. Data are from three independent experiments ((a), mean ± SEM) or are representative of three independent experiments with similar results (b). □P < 0.05 & □□P < 0.01, ANOVA with LSD t-test. Image collected & cropped by CiteAb from the following publication (https://pubmed.ncbi.nlm.nih.gov/31275414), licensed under a CC-BY license. Not internally tested by Novus Biologicals.



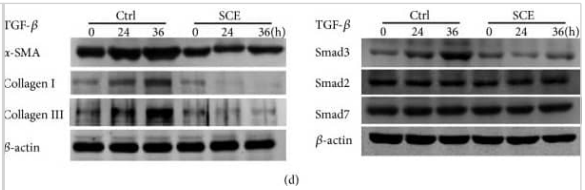
Immunocytochemistry/ Immunofluorescence: Collagen III alpha 1/COL3A1 Antibody [NB600-594] - Collagen I & collagen III accumulate in C57BL/6 mice in response to radiation. Bladder strips from irradiated & control mice were stained for collagen I or for collagen III & imaged using fluorescent microscopy. (a) Representative images (100 x 100 µm) of each mouse strain & treatment group are provided for collagen I & collagen III immunofluorescence. (b–c) Percentage of tissue□positive for collagen I or collagen III staining. Collagen I & III density is significantly elevated in C57BL/6 mice, but not in the C3H or BALB/c strains. Results are mean ± SD of n = 3–6 mice. Dashed line: ANOVA; Full line: multiple t □test. **p < .01, *** p < .001 Image collected & cropped by CiteAb from the following publication (https://pubmed.ncbi.nlm.nih.gov/32109348), licensed under a CC-BY license. Not internally tested by Novus Biologicals.



Immunohistochemistry: Collagen III alpha 1/COL3A1 Antibody [NB600-594] - Number of collagen I□expressing cells is increased in irradiated C57BL/6 detrusor. Bladder strips from irradiated & control mice were stained for collagen I or for collagen III mRNA & counterstained with methyl green. Collagen I & III mRNA (pink) is apparent in both control & irradiated bladder sections in all three mouse strains. The number of collagen I & III□producing cells in the detrusor is represented in the bar graphs. The number of collagen I□expressing cells is significantly elevated in C57BL/6 mice after irradiation. Dashed line separates the urothelium (U) & lamina propria (LP) from the detrusor muscle (D). Results are mean ± SD of n = 3–4 mice. Scale bar = 100 µm. op ≤ .08, * p < .05 Image collected & cropped by CiteAb from the following publication (https://pubmed.ncbi.nlm.nih.gov/32109348), licensed under a CC-BY license. Not internally tested by Novus Biologicals.



Western Blot: Collagen III alpha 1/COL3A1 Antibody [NB600-594] - SCE attenuates fibrotic responses in CFs by inhibiting TGF-β/Smad3 signaling activation. (a) RT-qPCR analysis of mRNA expression for genes of Col1a1, Col3a1, & Acta2 in cardiac fibroblasts (CFs) pretreated with different concentrations of SCE (5 μl/ml, 10 μl/ml, & 15 μl/ml) followed by TGF-β stimulation (20 ng/ml) for 24 h. (b) RT-qPCR analysis of mRNA expression for genes of Col1a1, Col3a1, & Acta2 in CFs pretreated with SCE (10 μl/ml) followed by TGF-β stimulation (20 ng/ml) for 12 h & 24 h. (c) RT-qPCR analysis of mRNA expression for genes of Smad2, Smad3, & Smad7 in CFs pretreated with SCE (10 μl/ml) followed by TGF-β stimulation (20 ng/ml) for 12 h & 24 h. (d) Immunoblot analysis of expression of Smad2, Smad3, & Smad7 in CFs pretreated with SCE (10 μl/ml) followed by TGF-β stimulation (20 ng/ml) for 24 h & 36 h. Data are from three independent experiments ((a)–(c), mean ± SEM) or are representative of three independent experiments with similar results (d). □P < 0.05 & □□P < 0.01, Student's t-test. Image collected & cropped by CiteAb from the following publication (https://pubmed.ncbi.nlm.nih.gov/31275414), licensed under a CC-BY license. Not internally tested by Novus Biologicals.



(d)

Publications

Xie Y, Yang F, He L, Huang H et Al. Single-cell dissection of the human blood-brain barrier and glioma blood-tumor barrier Neuron 2024-08-27 [PMID: 39191260]

Yang G, Xiang J, Yang X et al. Nuclear translocation of SIRT4 mediates deacetylation of U2AF2 to modulate renal fibrosis through alternative splicing-mediated upregulation of CCN2 eLife 2024-11-04 [PMID: 39495216]

Tian HP, Sun YH, He L et al. Single-Stranded DNA-Binding Protein 1 Abrogates Cardiac Fibroblast Proliferation and Collagen Expression Induced by Angiotensin II. Int Heart J. 2018-10-25 [PMID: 30369577]

Camarena, V;Williams, MM;Morales, AA;Zafeer, MF;Kilic, OV;Kamiar, A;Abad, C;Rasmussen, MA;Briski, LM;Peart, L;Bademci, G;Barbouth, DS;Smithson, S;Wang, G;Shehadeh, LA;Walz, K;Tekin, M; ADAMTSL2 mutations determine the phenotypic severity in Geleophysic Dysplasia JCI insight 2024-02-01 [PMID: 38300707]

Osiris Germán Idelfonso-García, Brisa Rodope Alarcón-Sánchez, Dafne Guerrero-Escalera, Norma Arely López-Hernández, José Luis Pérez-Hernández, Ruth Pacheco-Rivera, Jesús Serrano-Luna, Osbaldo Resendis-Antonio, Erick Andrés Muciño-Olmos, Diana Ivette Aparicio-Bautista, Gustavo Basurto-Islas, Rafael Baltiérrez-Hoyos, Verónica Rocío Vásquez-Garzón, Saúl Villa-Treviño, Pablo Muriel, Héctor Serrano, Julio Isael Pérez-Carreón, Jaime Arellanes-Robledo, Marco Fiore Nucleoredoxin Redox Interactions Are Sensitized by Aging and Potentiated by Chronic Alcohol Consumption in the Mouse Liver Antioxidants 2024-02-20 [PMID: 38539791]

B Wang, Y Tan, Y Zhang, S Zhang, X Duan, Y Jiang, T Li, Q Zhou, X Liu, Z Zhan Loss of KDM5B ameliorates pathological cardiac fibrosis and dysfunction by epigenetically enhancing ATF3 expression Experimental & Molecular Medicine, 2022-12-08;0(0):. 2022-12-08 [PMID: 36481938]

Laura Jahnke, Virginie Perrenoud, Souska Zandi, Yuebing Li, Federica Maria Conedera, Volker Enzmann, Girish Kumar Srivastava Modulation of Extracellular Matrix Composition and Chronic Inflammation with Pirfenidone Promotes Scar Reduction in Retinal Wound Repair Cells 2024-01-16 [PMID: 38247855]

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 ?1(III) in Alport glomeruli by mesangial filopodia injures podocytes via aberrant signaling through DDR1 and integrin ?2?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] (Immunocytochemistry/ Immunofluorescence)

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] (Block/Neutralize)

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)

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

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General: novus@novusbio.com

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

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