Product Datasheet

Collagen I alpha 1 Antibody

NB600-408-0.1mg

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 8/8/2017 v.20.1

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## Product Information

<table>
<thead>
<tr>
<th><strong>Unit Size</strong></th>
<th>0.1 mg</th>
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<tbody>
<tr>
<td><strong>Concentration</strong></td>
<td>1.0 mg/ml</td>
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<tr>
<td><strong>Storage</strong></td>
<td>Store at 4C short term. Aliquot and store at -20C long term. Avoid freeze-thaw cycles.</td>
</tr>
<tr>
<td><strong>Clonality</strong></td>
<td>Polyclonal</td>
</tr>
<tr>
<td><strong>Preservative</strong></td>
<td>0.01% Sodium Azide</td>
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<tr>
<td><strong>Isotype</strong></td>
<td>IgG</td>
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<tr>
<td><strong>Purity</strong></td>
<td>Immunogen affinity purified</td>
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<tr>
<td><strong>Buffer</strong></td>
<td>0.02 M Potassium Phosphate, 0.15 M Sodium Chloride, pH 7.2</td>
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<td><strong>Target Molecular Weight</strong></td>
<td>139 kDa</td>
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## Product Description

**Description**
Collagens are highly conserved throughout evolution and are characterized by an uninterrupted "Glycine-X-Y" triplet repeat that is a necessary part of the triple helical structure. For these reasons, it is often extremely difficult to generate antibodies with specificities to collagens. The development of 'type' specific antibodies is dependent on NON-DENATURED three-dimensional epitopes. This preparation results in a native conformation of the protein. Greatly diminished reactivity and selectivity of these antibodies will result if denaturing and reducing conditions are used for SDS-PAGE and immunoblotting. Type-I collagen is the predominant form of collagen in the human body and plays a role in scar tissue formation. Collagen type 1 is also an important component of tendons and found in most connective tissues including cartilage. Collagen 1 is associated with several diseases including: Ehlers Danlos syndrome (arthrochalasia), Ehlers-Danlos syndrome (classical type), Osteogenesis imperfecta type 1-4 and osteoporosis.

**Host** | Rabbit |
**Gene ID** | 1277 |
**Gene Symbol** | COL1A1 |
**Species** | Human, Mouse, Rat, Porcine, Bovine, Rabbit |

**Reactivity Notes**
Expected to react with most mammalian Type I collagens. Porcine reactivity reported in scientific literature (PMID: 21688145). Rabbit reactivity reported in scientific literature (PMID: 27663536).

**Specificity/Sensitivity**
Typically less than 1% cross-reactivity against other types of collagens was detected by ELISA against purified standards. 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 Type I collagens and has negligible cross-reactivity with Type II, III, IV, V or VI collagens. Non-specific cross-reaction of anti-collagen antibodies with other human serum proteins or non-collagen extracellular matrix proteins is negligible.

**Immunogen**
Collagen Type I from human and bovine placenta by limited pepsin digestion and selective salt precipitation.
Notes

Collagen type I consists of alpha-1 (139 kDa) and alpha-2 chains (129 kDa). Since collagen type I is a triple helix consisting of one alpha-2 chain and two alpha-1 chains, one can expect bands of the dimeric (~270 kDa) and the trimeric form (~400 kDa). Remember that those chains are cross-linked and can't be broken by typical sample denaturation for SDS-PAGE.

Product Application Details

Applications

Western Blot, ELISA, Immunocytochemistry/Immunofluorescence, Immunohistochemistry, Immunohistochemistry-Frozen, Immunohistochemistry-Paraffin

Recommended Dilutions


Application Notes

Anti-Collagen antibodies have been used 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. Greatly diminished reactivity and selectivity of these antibodies will result if denaturing and reducing conditions are used for in immunoblotting. ICC/IF reported in the literature (PMID: 21903125) IHC-F reported in the literature (PMID: 22402320). The observed molecular weight of the protein may vary from the listed predicted molecular weight due to post translational modifications, post translation cleavages, relative charges, and other experimental factors.

Images

Western Blot: Collagen I alpha 1 Antibody [NB600-408] - Lane 1: Human Collagen Type 1, Lane 2: None. Load: 50 ng per lane. Primary antibody: Collagen Type I antibody at 1:1,000 overnight at 4C. Secondary antibody: DyLight 649 rabbit secondary antibody at 1:20,000 for 30 min at RT. Block: incubated with blocking buffer for 30 min at RT. Predicted/Observed size: 139 & 130 kDa, 139 & 130 kDa for Collagen Type I. Other Band(s): Collagen Type I splice variants and isoforms.

Immunohistochemistry-Paraffin: Collagen I alpha 1 Antibody [NB600-408] - Rat colon tissue stained with Collagen I alpha 1 antibody (red) and Hoechst (blue). Image from verified customer review.
Immunohistochemistry-Paraffin: Collagen I alpha 1 Antibody [NB600-408] - 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 I at 1:1250 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 I is intra and extracellular. Staining: 3.3'-diaminobenzidine tetrahydrochloride was used as the chromogen. Nuclei were counterstained purple with hematoxylin.

Western Blot: Collagen I alpha 1 Antibody [NB600-408] - Detection of collagen I in Wistar rat hepatic stellate cells (HSC) in control (GFP-transduced) (left lane) and PPARg-transduced cell lysates (right lane). Protein staining shown below each blot depicts equal protein loading. An equal amount of the whole cell protein (100 ug) was separated by SDS-PAGE and electroblotted to nitro-cellulose membranes. Proteins were detected by incubating the membrane with anti-Collagen I antibody at a concentration of 0.2-2 ug/10 ml in TBS (100 mM Tris-HCl, 0.15 M NaCl, pH 7.4) with 5% non-fat milk. Detection occurred by incubation with a HRP conjugated secondary antibody at 1 ug/10 ml. Proteins were detected by a chemiluminescent method using the PIERCE ECL kit (Amersham Biosciences).

Immunocytochemistry/Immunofluorescence: Collagen I alpha 1 Antibody [NB600-408] - Primary human cardiac fibroblast cells were stained with anti-Collagen I antibody. Cells were cultured for 3 days in DMEM with 10% fetal calf serum. Image from verified customer review.

Immunohistochemistry-Paraffin: Collagen I alpha 1 Antibody [NB600-408] - Analysis of HRP conjugate of NB600-408. Tissue: Human Skin at pH9. Fixation: formalin fixed paraffin embedded. Primary antibody: Collagen Type I antibody at 10 ug/mL for 1 h at RT. Localization: Collagen Type I is secreted in the extracellular matrix. Staining: Collagen Type I as precipitated brown signal (A) with hematoxylin purple nuclear counterstain. With corresponding negative control (B).
Western Blot: Collagen I alpha 1 Antibody [NB600-408] - analysis of Collagen I alpha 1 in porcine burn wound lysate using anti-Collagen I alpha 1 antibody. Image from verified customer review.

Immunocytochemistry/Immunofluorescence: Collagen I alpha 1 Antibody [NB600-408] - Staining of human dermal fibroblast derived cell sheet. Image provided by product review by verified customer.

Immunocytochemistry/Immunofluorescence: Collagen I alpha 1 Antibody [NB600-408] - Staining of human HaCaT-ras A5-RT3 (SCC) frozen tumor sections. Image provided by Dr. Wa’el Al Rawashdeh of RWTH Aachen University.

Immunohistochemistry-Paraffin: Collagen I alpha 1 Antibody [NB600-408] - Human lung stained with Collagen I Antibody, diluted at 1:400.
Immunohistochemistry: Collagen I alpha 1 Antibody [NB600-408] - Analysis of Tissue: human lung. Fixation: formalin fixed paraffin embedded. Antigen retrieval: user optimized. Primary antibody: Collagen I 1:400. Secondary antibody: Peroxidase goat anti-rabbit at 1:10,000 for 45 min at RT. Localization: Strong staining was observed in the extracellular matrix of the lung. Epithelial cells were negative. Staining: antibody as precipitated red signal with a hematoxylin purple nuclear counterstain.

Immunohistochemistry-Paraffin: Collagen I alpha 1 Antibody [NB600-408] - Analysis of HRP conjugate of NB600-408. Tissue: Human Skin at pH6. Fixation: formalin fixed paraffin embedded. Primary antibody: Collagen Type I antibody at 10 ug/mL for 1 h at RT. Localization: Collagen Type I is secreted in the extracellular matrix. Sta
<table>
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<tr>
<th>Publications</th>
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<tr>
<td>Lugenbiel P, Wenz F, Govorov K et al. Atrial myofibroblast activation and connective tissue formation in a porcine model of atrial fibrillation and reduced left ventricular function. Life Sci. May 22 2017 12:00AM [PMID: 28546006] (Porcine)</td>
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<td>Sakurai Y, Hada T, Yamamoto S et al. Remodeling of the Extracellular Matrix by Endothelial Cell-Targeting siRNA Improves the EPR-Based Delivery of 100 nm Particles. Mol Ther 2016 Dec [PMID: 27633444]</td>
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<tr>
<td>Malinverno M, Corada M, Ferrarini L et al. Peg3/PW1 is a marker of a subset of vessel associated endothelial progenitors Stem Cells Jan 16 2017 12:00AM [PMID: 28090691] (ICC/IF, WB, Mouse)</td>
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<td>More publications at <a href="http://www.novusbio.com/NB600-408">http://www.novusbio.com/NB600-408</a></td>
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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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NB7160 Goat anti-Rabbit IgG (H+L) Secondary Antibody [HRP]
NBP2-24891 Rabbit IgG Isotype Control
NBP1-97266 Collagen I alpha 1 Full length Protein

General Contact Information
www.novusbio.com
Technical Support: technical@novusbio.com
Orders: orders@novusbio.com
General: novus@novusbio.com