

Product datasheet

Anti-Collagen IV antibody ab21295

[4 References](#) [1 Image](#)

Overview

Product name	Anti-Collagen IV antibody
Description	Rabbit polyclonal to Collagen IV
Host species	Rabbit
Specificity	Recognises: Human collagen type IV 100% Human collagen types I, II <0.1% Human collagen type III, V <1.0% Human Fibronectin <0.1% Mouse Laminin <0.1%
Tested applications	Suitable for: IHC-Fr, ICC/IF, ELISA, RIA, IHC-P
Species reactivity	Reacts with: Human
Immunogen	Full length native protein (purified): Collagen type IV extracted and purified from human placenta
Positive control	IHC-P: human placenta FFPE tissue sections.

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Upon delivery aliquot and store at -20°C. Avoid freeze / thaw cycles.
Purity	Ion Exchange Chromatography
Clonality	Polyclonal
Isotype	IgG

Applications

Our [Abpromise guarantee](#) covers the use of **ab21295** in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Application	Abreviews	Notes
IHC-Fr		Use at an assay dependent concentration. PubMed: 20434214
ICC/IF		Use at an assay dependent concentration.
ELISA		Use at an assay dependent concentration.

Application	Abreviews	Notes
RIA		Use at an assay dependent concentration.
IHC-P		Use a concentration of 1 µg/ml. Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

Target

Function

Type IV collagen is the major structural component of glomerular basement membranes (GBM), forming a 'chicken-wire' meshwork together with laminins, proteoglycans and entactin/nidogen. Arresten, comprising the C-terminal NC1 domain, inhibits angiogenesis and tumor formation. The C-terminal half is found to possess the anti-angiogenic activity. Specifically inhibits endothelial cell proliferation, migration and tube formation. Inhibits expression of hypoxia-inducible factor 1alpha and ERK1/2 and p38 MAPK activation. Ligand for alpha1/beta1 integrin.

Tissue specificity

Highly expressed in placenta.

Involvement in disease

Defects in COL4A1 are a cause of brain small vessel disease with hemorrhage (BSVDH) [MIM:607595]. Brain small vessel diseases underlie 20 to 30 percent of ischemic strokes and a larger proportion of intracerebral hemorrhages. Inheritance is autosomal dominant. Defects in COL4A1 are the cause of hereditary angiopathy with nephropathy aneurysms and muscle cramps (HANAC) [MIM:611773]. The clinical renal manifestations include hematuria and bilateral large cysts. Histologic analysis revealed complex basement membrane defects in kidney and skin. The systemic angiopathy appears to affect both small vessels and large arteries.

Defects in COL4A1 are a cause of porencephaly familial (PCEPH) [MIM:175780]. Porencephaly is a term used for any cavitation or cerebrospinal fluid-filled cyst in the brain. Porencephaly type 1 is usually unilateral and results from focal destructive lesions such as fetal vascular occlusion or birth trauma. Type 2, or schizencephalic porencephaly, is usually symmetric and represents a primary defect or arrest in the development of the cerebral ventricles.

Sequence similarities

Belongs to the type IV collagen family.
Contains 1 collagen IV NC1 (C-terminal non-collagenous) domain.

Domain

Alpha chains of type IV collagen have a non-collagenous domain (NC1) at their C-terminus, frequent interruptions of the G-X-Y repeats in the long central triple-helical domain (which may cause flexibility in the triple helix), and a short N-terminal triple-helical 7S domain.

Post-translational modifications

Lysines at the third position of the tripeptide repeating unit (G-X-Y) are hydroxylated in all cases and bind carbohydrates.

Prolines at the third position of the tripeptide repeating unit (G-X-Y) are hydroxylated in some or all of the chains.

Type IV collagens contain numerous cysteine residues which are involved in inter- and intramolecular disulfide bonding. 12 of these, located in the NC1 domain, are conserved in all known type IV collagens.

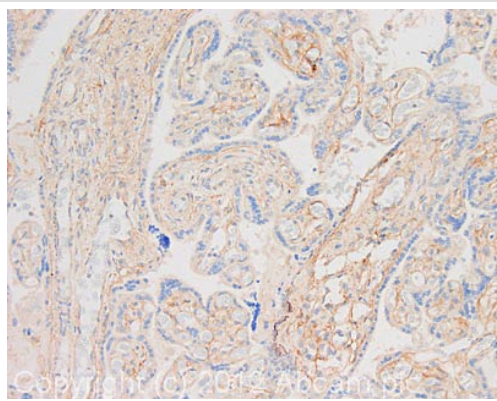
The trimeric structure of the NC1 domains is stabilized by covalent bonds between Lys and Met residues.

Proteolytic processing produces the C-terminal NC1 peptide, arresten.

Cellular localization

Secreted > extracellular space > extracellular matrix > basement membrane.

Images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Collagen IV antibody (ab21295)

IHC image of Collagen IV staining in human placenta formalin fixed paraffin embedded tissue section, performed on a Leica Bond™ system using the standard protocol F. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH6, epitope retrieval solution 1) for 20 mins. The section was then incubated with ab21295, 1µg/ml, for 15 mins at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX.

For other IHC staining systems (automated and non-automated) customers should optimize variable parameters such as antigen retrieval conditions, primary antibody concentration and antibody incubation times.

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