

Product datasheet

Anti-Collagen IV antibody [EPR20966] ab214417

Recombinant RabMAb

2 Images

Overview

Product name	Anti-Collagen IV antibody [EPR20966]
Description	Rabbit monoclonal [EPR20966] to Collagen IV
Host species	Rabbit
Specificity	The immunogen is within the Arresten region of Collagen alpha-1(IV) chain.
Tested applications	Suitable for: IHC-P
Species reactivity	Reacts with: Human
Immunogen	Synthetic peptide within Human Collagen IV aa 1450 to the C-terminus. The exact sequence is proprietary. The immunogen is within the Arresten region of Collagen alpha-1(IV) chain. Database link: P02462
Positive control	IHC-P: Human kidney and thyroid carcinoma tissues.
General notes	This product is a recombinant monoclonal antibody, which offers several advantages including: <ul style="list-style-type: none"> - High batch-to-batch consistency and reproducibility - Improved sensitivity and specificity - Long-term security of supply - Animal-free production For more information see here . Our RabMAb [®] technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb[®] patents .

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C long term. Avoid freeze / thaw cycle.
Storage buffer	Preservative: 0.01% Sodium azide Constituents: 0.05% BSA, 40% Glycerol, PBS
Purity	Protein A purified
Clonality	Monoclonal
Clone number	EPR20966

Isotype

IgG

Applications

Our [Abpromise guarantee](#) covers the use of **ab214417** 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-P		1/500. Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 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.

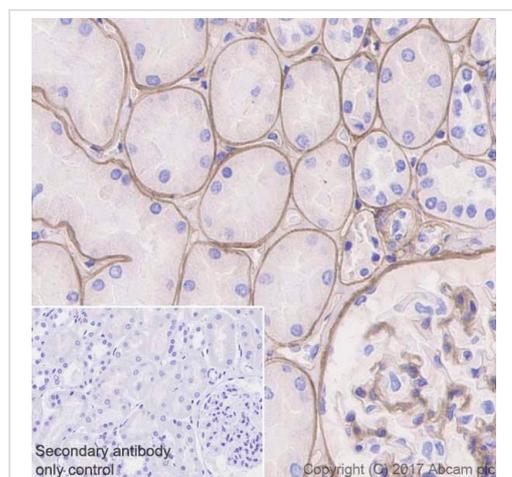
Domain

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.

Images

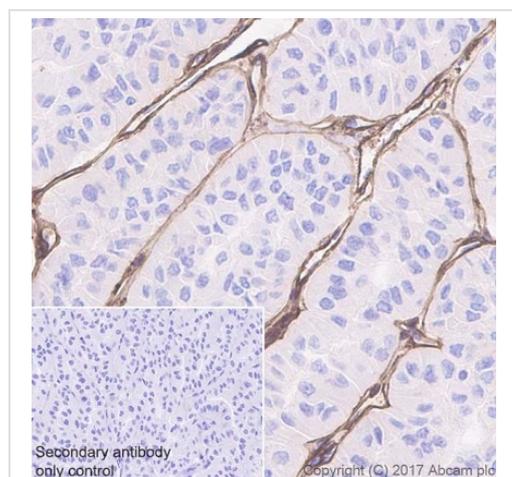


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Collagen IV antibody [EPR20966] (ab214417)

Immunohistochemical analysis of paraffin-embedded human kidney tissue labeling Collagen IV with ab214417 at 1/500 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) Ready to use. Basement membrane staining on human kidney (PMID: 20551626, PMID: 24445937). Counter stained with hematoxylin.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) Ready to use.

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Collagen IV antibody [EPR20966] (ab214417)

Immunohistochemical analysis of paraffin-embedded human thyroid carcinoma tissue labeling Collagen IV with ab214417 at 1/500 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) Ready to use. Basement membrane staining on human thyroid cancer. Counter stained with hematoxylin.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) Ready to use.

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

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