Product datasheet

Anti-COL4A3 antibody ab73981

1 Abreviews

Overview

Product name Anti-COL4A3 antibody
Description Rabbit polyclonal to COL4A3
Host species Rabbit
Specificity Reacts specifically with a fragment (26 kDa) and the precursor (162 kDa) of human COL4A3 protein.

Tested applications Suitable for: WB, IHC-Fr
Species reactivity Reacts with: Human, Zebrafish
Predicted to work with: Mouse, Rat

Immunogen Synthetic peptide derived from the C-terminal domain of human COL4A3

Properties

Form Liquid
Storage instructions Shipped at 4°C. Upon delivery aliquot and store at -20°C. Avoid freeze / thaw cycles.
Storage buffer Constituent: Whole serum
Purity Whole antiserum
Clonality Polyclonal
Isotype IgG

Applications

Our Abpromise guarantee covers the use of ab73981 in the following tested applications.
The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

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**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. Tumstatin, a cleavage fragment corresponding to the collagen alpha 3(IV) NC1 domain, possesses both anti-angiogenic and anti-tumor cell activity; these two anti-tumor properties may be regulated via RGD-independent ITGB3-mediated mechanisms.

**Tissue specificity**
Alpha 3 and alpha 4 type IV collagens are colocalized and present in kidney, eye, basement membranes of lens capsule, cochlea, lung, skeletal muscle, aorta, synaptic fibers, fetal kidney and fetal lung. PubMed:8083201 reports similar levels of expression of alpha 3 and alpha 4 type IV collagens in kidney, but PubMed:7523402 reports that in kidney levels of alpha 3 type IV collagen are significantly lower than those of alpha 4 type IV collagen. According to PubMed:8083201, alpha 3 type IV collagen is not detected in heart, brain, placenta, liver, pancreas, extrasynaptic muscle fibers, endoneurial and perineurial nerves, fetal brain, fetal heart and fetal liver. According to PubMed:7523402, alpha 3 type IV collagen is strongly expressed in pancreas, neuroretina and calvaria and not expressed in adrenal, ileum and skin. Isoform 1 and isoform 3 are strongly expressed in kidney, lung, suprarenal capsule, muscle and spleen, in each of these tissues isoform 1 is more abundant than isoform 3. Isoform 1 and isoform 3 are expressed at low levels in artery, fat, pericardium and peripheral nerve, but not in placenta, mesangium, skin, pleura and cultured umbilical endothelial cells.

**Involvement in disease**
Note=Autoantibodies against the NC1 domain of alpha 3(IV) are found in Goodpasture syndrome, an autoimmune disease of lung and kidney.
Defects in COL4A3 are a cause of Alport syndrome autosomal recessive (APSAR) [MIM:203780]. APSAR is characterized by progressive glomerulonephritis, glomerular basement membrane defects, renal failure, sensorineural deafness and specific eye abnormalities (lenticonous and macular flecks). The disorder shows considerable heterogeneity in that families differ in the age of end-stage renal disease and the occurrence of deafness.
Defects in COL4A3 are a cause of benign familial hematuria (BFH) [MIM:141200]; also known as thin basement membrane nephropathy. BFH is characterized by persistent hematuria, an electron microscopically detectable thin glomerular basement membrane (GBM) and an autosomal dominant mode of inheritance. Renal function remains normal. In children, differentiation between BFH and AS can be difficult, because both disorders are manifested by persistent hematuria and thin GBM at that age.
Defects in COL4A3 are a cause of Alport syndrome autosomal dominant (APSAD) [MIM:104200]. Alport syndrome is characterized by progressive glomerulonephritis, glomerular basement membrane defects, renal failure, sensorineural deafness and specific eye abnormalities (lenticonous and macular flecks). The disorder shows considerable heterogeneity in that families differ in the age of end-stage renal disease and the occurrence of deafness.

**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**
Prolines at the third position of the tripeptide repeating unit (G-X-Y) are hydroxylated in some or all of the chains.
Isoform 2 contains an additional N-linked glycosylation site.
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. Phosphorylated by the Goodpasture antigen-binding protein/COL4A3BP.

**Cellular localization**
Secreted > extracellular space > extracellular matrix > basement membrane. Colocalizes with COL4A4 and COL4A5 in GBM, tubular basement membrane (TBM) and synaptic basal lamina (BL).

**Please note:** All products are "FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES"

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