COL4A4 Rabbit pAb

CatalogNo: YT1027

Key Features

Host Species
- Rabbit

Reactivity
- Human,Mouse

Applications
- IHC,IF,ELISA

MW
- 164kD (Calculated)

Isotype
- IgG

Recommended Dilution Ratios

IHC 1:100-1:300
IF 1:200-1:1000
ELISA 1:5000
Not yet tested in other applications.

Storage

Storage*	-15°C to -25°C/1 year(Do not lower than -25°C)
Formulation	Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.02% sodium azide.

Basic Information

Clonality	Polyclonal

Immunogen Information

Immunogen	The antiserum was produced against synthesized peptide derived from human Collagen IV alpha4. AA range:541-590
Specificity	COL4A4 Polyclonal Antibody detects endogenous levels of COL4A4 protein.

Target Information

Gene name COL4A4

Protein Name Collagen alpha-4(IV) chain

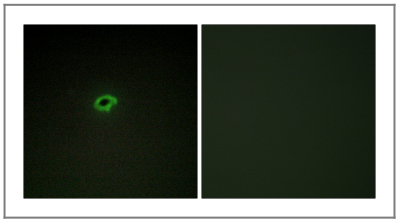
Organism	Gene ID	UniProt ID
Human	1286;	P53420;
Mouse		Q9QZR9;

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). .

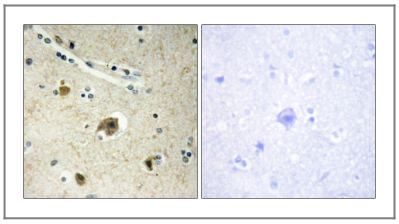
Tissue specificity Expressed in Bruch's membrane, outer plexiform layer, inner nuclear layer, inner plexiform layer, ganglion cell layer, inner limiting membrane and around the blood vessels of the retina (at protein level) (PubMed:29777959). Alpha 3 and alpha 4 type IV collagens are colocalized and 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. Highest levels of expression of alpha 4 type IV collagen are detected in kidney, calvaria, neuroretina and cardiac muscle. Lower levels of expression are observed in brain, lung and thymus, and no expression is detected in choroid plexus, liver, adrenal, pancreas, ileum or skin.

Function Disease:Defects in COL4A4 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.,Disease:Defects in COL4A4 are a cause of benign familial hematuria (BFH) [MIM:141200]; also known as thin basement membrane disease. 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.,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.,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.,PTM:Prolines at the third position of the tripeptide repeating unit (G-X-Y) are hydroxylated in some or all of the chains.,PTM: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.,similarity:Belongs to the type IV collagen family.,similarity:Contains 1 collagen IV NC1 (C-terminal non-collagenous) domain.,subcellular location:Colocalizes with COL4A4 and COL4A5 in GBM, tubular basement membrane (TBM) and synaptic basal lamina (BL).,subunit:There are six type IV collagen isoforms, alpha 1(IV)-alpha 6(IV), each of which can form a triple helix structure with 2 other chains to generate type IV collagen network. The alpha 3(IV) chain forms a triple helical protomer with alpha 4(IV) and alpha 5(IV); this triple helical structure dimerizes through NC1-NC1 domain interactions such that the alpha 3(IV), alpha 4(IV) and alpha 5(IV) chains of one protomer connect with the alpha 5(IV), alpha 4(IV) and alpha 3(IV) chains of the opposite protomer, respectively. Associates with LAMB2 at the neuromuscular junction and in GBM.,tissue specificity:Alpha 3 and alpha 4 type IV collagens are colocalized and present only in basement membranes of kidney, eye, cochlea, lung and brain.,

Validation Data



Immunofluorescence analysis of COS7 cells, using Collagen IV alpha4 Antibody. The picture on the right is blocked with the synthesized peptide.



Immunohistochemistry analysis of paraffin-embedded human brain tissue, using Collagen IV alpha4 Antibody. The picture on the right is blocked with the synthesized peptide.

Contact information

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Please scan the QR code to access additional product information:
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