**Product datasheet**

**Anti-Collagen IV antibody ab19808**

**Product name**
Anti-Collagen IV antibody

**Description**
Rabbit polyclonal to Collagen IV

**Host species**
Rabbit

**Tested applications**
Suitable for: IHC-Fr, IHC-P, IHC-FoFr, WB, IHC-FrFl, ICC/IF, RIA, ELISA, IHC - Wholemount

**Species reactivity**
Reacts with: Mouse, Rat

**Immunogen**
Full length native protein (extracted and purified from tumor tissues) (Mouse).

**Positive control**
IHC-P: Mouse brain, pancreas and mammary gland tissue. ICC/IF: Mouse ovaries, and brain cells. IHC-fr: Mouth tooth tissue.

**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. Avoid freeze / thaw cycle.

**Purity**
Immunogen affinity purified

**Purification notes**
Ion exchange chromatography (DEAE-Trisacryl).

**Clonality**
Polyclonal

**Isotype**
IgG

**Applications**

Our Abpromise guarantee covers the use of ab19808 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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<tr>
<th>Application</th>
<th>Abreviews</th>
<th>Notes</th>
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</thead>
<tbody>
<tr>
<td>IHC-Fr</td>
<td>⭐⭐⭐⭐⭐</td>
<td>1/400. Permeabilisation with ~0.2% Triton is recommended</td>
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<tr>
<td>IHC-P</td>
<td>⭐⭐⭐⭐⭐</td>
<td>1/500.</td>
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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. 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

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<td>ELISA</td>
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<tr>
<td>IHC - Wholemount</td>
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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**

Immunohistochemical analysis of paraffin-embedded mouse pancreas tissue stained for Collagen IV using ab19808. Endocrine-cells coated with a layer of extracellular matrix (P1). Immunohistochemical staining for Insulin (green), glucagon (red) and collagen IV (yellow) is shown. Note that intra-islet blood vessels are also associated with the extracellular matrix. Scale bar is 50 µm.

The primary antibodies were detected using different combinations of Cy2, Cy5 and Texas Red-conjugated secondary antibodies and the image was captured via confocal microscopy.

Ovaries were dissected from PND 23–29 mice, embedded in Cryomatrix and fixed with 4% formaldehyde for 10 minutes, rinsed three times with phosphate-buffered saline (PBS), then permeabilized with 0.1% Triton X-100 for 15 minutes. Sections were again rinsed three times with PBS, blocked for 30 minutes with blocking solution (5% BSA in 0.1% Triton X-100), then rinsed three times with blocking solution. The tissue was then incubated for one hour with ab19808 at 1/400 dilution. Sections were then rinsed three times in blocking solution and incubated in secondary antibody (FITC-conjugated goat anti-rabbit secondary antibody). Immunofluorescence with ab19808 was used to detect Collagen IV localization to the follicular basal lamina (white filled arrowhead), focimatrix (open arrowhead), thecal matrix (asterix), and endothelial basal lamina of stromal blood vessels (square).
ab19808 staining Collagen IV in murine brain tissue/ human xenograft tissue by Immunohistochemistry. Tissue was fixed in AFA (alcohol-formal-acetate) and a heat mediated antigen retrieval step was performed using Tris-EDTA pH 9. Samples were then blocked using 3% BSA for 30 minutes at 20°C and then incubated with ab19808 at a 1/500 dilution for 1 hour and 30 minutes. The secondary used was an undiluted HRP-conjugated goat polyclonal. Left side: normal mouse brainRight side: human glioblastoma xenograft

ab19808 at a 1/200 dilution staining mouse mammary gland tissue by Immunohistochemistry (Formalin-fixed paraffin-embedded sections). The antibody was incubated with the tissue for 16 hours and then detected with an Alexa Fluor® 488 conjugated anti-rabbit antibody.

This image is courtesy of an Abreview submitted by an anonymous researcher on 26 January 2006.
Immunocytochemistry/Immunofluorescence - Anti-Collagen IV antibody (ab19808)

This image is courtesy of an anonymous Abreview

ab19808 staining Collagen IV in mouse brain cells (ab30149) by ICC/IF (Immunocytochemistry/immunofluorescence). Cells were fixed with formaldehyde and blocked with 0.25% TNB for 30 minutes at 22°C. Samples were incubated with primary antibody 1/250 in TNB for 18 hours at 22°C. A Biotin-conjugated Goat polyclonal to rabbit IgG (ab6720), dilution 1/500, was used as secondary antibody.

Immunohistochemistry (Frozen sections) - Anti-Collagen IV antibody (ab19808)

This image is a courtesy of Adnane Nait Lechguer

ab19808 staining Collagen IV in mouse tooth tissue section by Immunohistochemistry (Frozen sections). Tissue samples were blocked with 1% BSA for 20 minutes at 200°C and incubated with undiluted primary antibody for 1 hour at 200°C. An Alexa Fluor®594-conjugated chicken polyclonal to rabbit IgG was used as secondary antibody at 1/500 dilution. Red colour in the image represents staining of Collagen-IV and the green is for CD31, yellow for ED16+6, which were purchased from different sources.

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