

Product datasheet

Native Human Collagen IV protein ab7536

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Description

Product name	Native Human Collagen IV protein
Expression system	Native
Accession	<u>P02462</u>
Protein length	Full length protein
Animal free	No
Nature	Native
Species	Human
Predicted molecular weight	161 kDa
Additional sequence information	Prepared from human placenta and is chromatographically and immunologically pure.

Specifications

Our **Abpromise guarantee** covers the use of **ab7536** in the following tested applications.

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

Applications	SDS-PAGE Western blot Immunoprecipitation ELISA Blocking
Form	Liquid
Additional notes	This product is free from other collagens, human serum proteins and non-collagen extracellular matrix proteins. This product reacts with anti-Collagen Type IV. Reaction with anti-Collagen I, II, III, V or VI is negligible (typically less than 1% cross reactivity was detected by ELISA).

Preparation and Storage

Stability and Storage	Shipped at 4°C. Upon delivery aliquot. Store at +4°C. Store undiluted. Preservative: 0.01% Sodium azide Constituent: 3% Acetic acid buffer
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General Info

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.

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