

## DESCRIPTION

|                           |                                                                                                                                                                                                                                                                             |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Species Reactivity</b> | Mouse                                                                                                                                                                                                                                                                       |
| <b>Specificity</b>        | Detects mouse Collagen XIII $\alpha$ 1 in direct ELISAs and Western blots. In direct ELISAs, approximately 35% cross-reactivity with recombinant human (rh) COL13A1v4 is observed, and less than 1% cross-reactivity with rhCOL4A1, rhCOL25A1, rhCOL3A1, and rhCOL1A1 i     |
| <b>Source</b>             | Polyclonal Sheep IgG                                                                                                                                                                                                                                                        |
| <b>Purification</b>       | Antigen Affinity-purified                                                                                                                                                                                                                                                   |
| <b>Immunogen</b>          | Mouse myeloma cell line NS0-derived recombinant mouse Collagen XIII $\alpha$ 1<br>Glu107-Gln565<br>Accession # AAH34164                                                                                                                                                     |
| <b>Conjugate</b>          | Alexa Fluor 594<br>Excitation Wavelength: 590 nm<br>Emission Wavelength: 617 nm                                                                                                                                                                                             |
| <b>Formulation</b>        | Supplied 0.2mg/ml in 1X PBS with RDF1 and 0.09% Sodium Azide<br><br>*Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions. |

## APPLICATIONS

**Please Note:** Optimal dilutions should be determined by each laboratory for each application. [General Protocols](#) are available in the Technical Information section on our website.

|                             |                                                                        |
|-----------------------------|------------------------------------------------------------------------|
| <b>Western Blot</b>         | Optimal dilution of this antibody should be experimentally determined. |
| <b>Immunohistochemistry</b> | Optimal dilution of this antibody should be experimentally determined. |

## PREPARATION AND STORAGE

|                                |                                                                                                                   |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------|
| <b>Shipping</b>                | The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below. |
| <b>Stability &amp; Storage</b> | Protect from light. Do not freeze. 12 months from date of receipt, 2 to 8 °C as supplied                          |

## BACKGROUND

Collagen XIII  $\alpha$ 1 is an 85-95 kDa protein in the type 2 transmembrane collagen family (1). Mature mouse Collagen XIII  $\alpha$ 1 consists of a 40 amino acid (aa) cytoplasmic domain, a 19 aa transmembrane segment, and a 692 aa extracellular domain (ECD). The ECD contains three collagenous regions separated by shorter non-collagenous regions (2, 3). Within comparable regions of the ECD, mouse Collagen XIII  $\alpha$ 1 shares 85% and 88% aa sequence identity with human and rat Collagen XIII  $\alpha$ 1, respectively. Mouse Collagen XIII  $\alpha$ 1 is extensively spliced, with some isoforms showing a tissue specific distribution (2, 4). Collagen XIII  $\alpha$ 1 is widely expressed during development and in the adult (4, 5). It localizes to intercellular adherens junctions and cell-matrix focal adhesions (6, 7). Collagen XIII  $\alpha$ 1 assembles into disulfide-linked trimers, a process that is enhanced by proline hydroxylation (2, 8). Trimerization involves triple helix formation within the collagenous domains, although portions of the non-collagenous regions can also form coiled coils (8-10). The ECD of trimeric Collagen XIII  $\alpha$ 1 is an extended rod-like structure with two flexible hinges that correspond to non-collagenous regions (11). Collagen XIII  $\alpha$ 1 clusters in cholesterol-rich domains on the plasma membrane (2, 12), and it can be cleaved from the cell surface or intracellularly by a furin-like protease (12). Collagen XIII  $\alpha$ 1 binds the extracellular matrix molecules fibronectin, heparin, integrin  $\alpha$ 1, nidogen-2, and perlecan (11, 13). The shed ECD retains its ability to bind fibronectin and can interfere with matrix formation (14).

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