

## DESCRIPTION

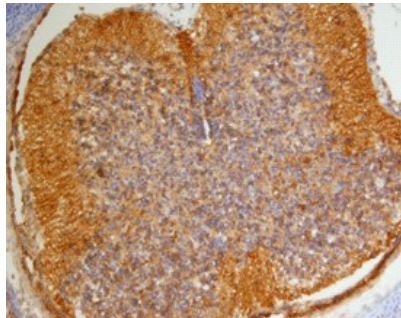
<b>Species Reactivity</b>	Mouse
<b>Specificity</b>	Detects mouse Collagen XIII $\alpha$ 1 in direct ELISAs and Western blots. In direct ELISAs, approximately 35% cross-reactivity with recombinant human (rh) COL13A1v4 is observed, and less than 1% cross-reactivity with rhCOL4A1, rhCOL25A1, rhCOL3A1, and rhCOL1A1 is observed.
<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 Glu107-Gln565 Accession # AAH34164
<b>Formulation</b>	Lyophilized from a 0.2 $\mu$ m filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied as a 0.2 $\mu$ m filtered solution in PBS.

## 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.

	Recommended Concentration	Sample
<b>Western Blot</b>	1 $\mu$ g/mL	See Below
<b>Immunohistochemistry</b>	5-15 $\mu$ g/mL	See Below

## DATA

<p><b>Western Blot</b></p>  <p><b>Detection of Human Collagen XIII <math>\alpha</math>1 by Western Blot.</b> Western blot shows lysates of HT1080 human fibrosarcoma cell line. PVDF membrane was probed with 1 <math>\mu</math>g/mL of Sheep Anti-Mouse Collagen XIII <math>\alpha</math>1 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF4627) followed by HRP-conjugated Anti-Sheep IgG Secondary Antibody (Catalog # HAF016). A specific band was detected for Collagen XIII <math>\alpha</math>1 at approximately 85-95 kDa (as indicated). This experiment was conducted under reducing conditions and using <a href="#">Immunoblot Buffer Group 1</a>.</p>	<p><b>Immunohistochemistry</b></p>  <p><b>Collagen XIII <math>\alpha</math>1 in Mouse Embryo.</b> Collagen XIII <math>\alpha</math>1 was detected in immersion fixed frozen sections of mouse embryo (13 d.p.c.) using Sheep Anti-Mouse Collagen XIII <math>\alpha</math>1 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF4627) at 15 <math>\mu</math>g/mL overnight at 4 <math>^{\circ}</math>C. Tissue was stained using the Anti-Sheep HRP-DAB Cell &amp; Tissue Staining Kit (brown; Catalog # CTS019) and counterstained with hematoxylin (blue). Specific staining was localized to spinal cord. View our protocol for <a href="#">Chromogenic IHC Staining of Frozen Tissue Sections</a>.</p>
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## PREPARATION AND STORAGE

<b>Reconstitution</b>	Reconstitute at 0.2 mg/mL in sterile PBS.
<b>Shipping</b>	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 $^{\circ}$ C
<b>Stability &amp; Storage</b>	<p><b>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b></p> <ul style="list-style-type: none"> <li>● 12 months from date of receipt, -20 to -70 <math>^{\circ}</math>C as supplied.</li> <li>● 1 month, 2 to 8 <math>^{\circ}</math>C under sterile conditions after reconstitution.</li> <li>● 6 months, -20 to -70 <math>^{\circ}</math>C under sterile conditions after reconstitution.</li> </ul>

**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).

**References:**

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