Human MMP-12 Antibody

Antigen Affinity-purified Polyclonal Goat IgG
Catalog Number: AF917

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human MMP-12 in direct ELISAs and Western blots. In direct ELISAs, approximately 8% cross-reactivity with recombinant mouse MMP-12 is observed, and less than 2% cross-reactivity with recombinant human (rh) MMP-1 and rhMMP-3 is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	Mouse myeloma cell line NS0-derived recombinant human MMP-12 Leu17-Cys470 Accession # P39900
Formulation	Lyophilized from a 0.2 μm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied as a 0.2 μm filtered solution in PBS.

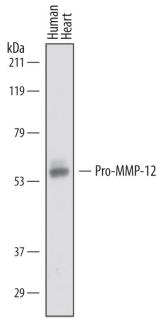
APPLICATIONS

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
Western Blot	2 µg/mL	See Below
Immunohistochemistry	5-15 µg/mL	See Below
Immunoprecipitation	25 µg/mL	Conditioned cell culture medium spiked with Recombinant Human MMP-12 (Catalog # 917-MP), see our available Western blot detection antibodies

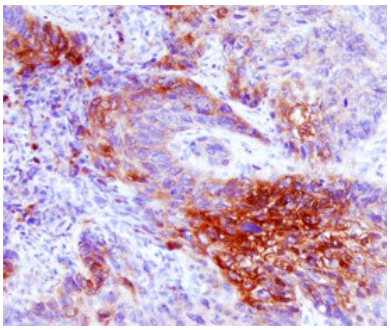
DATA

Western Blot



Detection of Human Pro-MMP-12 by Western Blot. Western blot shows lysates of human heart tissue. PVDF membrane was probed with 2 µg/mL of Goat Anti-Human MMP-12 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF917) followed by HRP-conjugated Anti-Goat IgG Secondary Antibody (Catalog # HAF019). A specific band was detected for Pro-MMP-12 at approximately 54 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 8.

Immunohistochemistry



MMP-12 in Human Squamous Cell Carcinoma. MMP-12 was detected in immersion fixed paraffin-embedded sections of human squamous cell carcinoma using Goat Anti-Human MMP-12 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF917) at 10 µg/mL overnight at 4 °C. Before incubation with the primary antibody, tissue was subjected to heat-induced epitope retrieval using Antigen Retrieval Reagent-Basic (Catalog # CTS013). Tissue was stained using the Anti-Goat HRP-DAB Cell & Tissue Staining Kit (brown; Catalog # CTS008) and counterstained with hematoxylin (blue). Specific staining was localized to cancer cells. View our protocol for Chromogenic IHC Staining of Paraffin-embedded Tissue Sections.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.2 mg/mL in sterile PBS.
Shipping	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 °C
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 6 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

Matrix metalloproteinases (MMPs) are a family of zinc and calcium dependent endopeptidases with the combined ability to degrade all the components of the extracellular matrix. MMP-12 (macrophage elastase) is found in macrophages and its expression in monocytes can be induced by cytokines such as GM-CSF and CD40 signaling (1). In addition to elastin, MMP-12 can degrade a broad spectrum of substrates, including type IV collagen, fibronectin, laminin, vitronectin, proteoglycans, chondroitin sulfate, myelin basic protein, α_1-antitrypsin, and plasminogen. It can also activate MMP-2 and MMP-3. MMP-12 is required for macrophage-mediated proteolysis and matrix invasion in mice. MMP-12 is proposed to have a direct role in the pathogenesis of aortic aneurysms and in the development of pulmonary emphysema that results from chronic inhalation of cigarette smoke. Structurally, the pro MMP-12 consists of following domains: a pro domain, a catalytic domain containing the zinc-binding site, and a C-terminal hemopexin-like domain. The rhMMP-12 corresponds to the pro form that can be activated by autocatalysis under the conditions described above.

References:

1. S.D. Shapiro *et al*. (2004) in *Handbook of Proteolytic Enzymes* (eds. A.J. Barrett *et al*.) pp.540 - 544, Academic Press, San Diego.

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