

DESCRIPTION	
Species Reactivity	Mouse
Specificity	Detects mouse MMP-9 in direct ELISAs and Western blots. In direct ELISAs and Western blots, approximately 10% cross-reactivity with recombinant human (rh) MMP-9 is observed and less than 2% cross-reactivity with rhMMP-1, -2, -3, -7, -8, -10, -12, and -13 is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	Mouse myeloma cell line NS0-derived recombinant mouse MMP-9 Ala20-Pro730 Accession # P41245
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose.

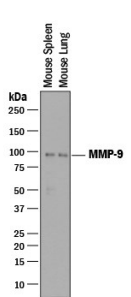
APPLICATIONS

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	0.25 µg/mL	See Below
Immunocytochemistry	5-15 µg/mL	See Below
Immunohistochemistry	5-15 µg/mL	See Below
Immunoprecipitation	25 µg/mL	Conditioned cell culture medium spiked with Recombinant Mouse MMP-9 (Catalog # 909-MM), see our available Western blot detection antibodies
Simple Western	5 µg/mL	See Below

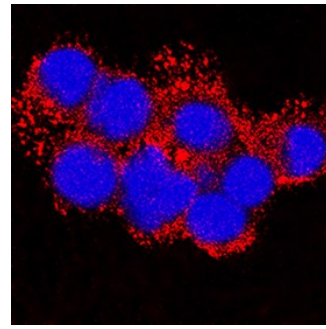
DATA

Western Blot



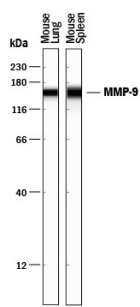
Detection of Mouse MMP-9 by Western Blot. Western blot shows lysates of mouse spleen tissue and mouse lung tissue. PVDF membrane was probed with 0.25 µg/mL of Goat Anti-Mouse MMP-9 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF909) followed by HRP-conjugated Anti-Goat IgG Secondary Antibody (Catalog # HAF019). A specific band was detected for MMP-9 at approximately 100 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.

Immunocytochemistry




MMP-9 in Mouse Splenocytes. MMP-9 was detected in immersion fixed mouse splenocytes using Goat Anti-Mouse MMP-9 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF909) at 5 µg/mL for 3 hours at room temperature. Cells were stained using the NorthernLights™ 557-conjugated Anti-Goat IgG Secondary Antibody (red; Catalog # NL001) and counterstained with DAPI (blue). Specific staining was localized to cytoplasm. View our protocol for [Fluorescent ICC Staining of Non-adherent Cells](#).


Simple Western



Detection of Mouse MMP-9 by Simple Western™. Simple Western lane view shows lysates of mouse lung tissue and mouse spleen tissue, loaded at 0.2 mg/mL. A specific band was detected for MMP-9 at approximately 155 kDa (as indicated) using 5 µg/mL of Goat Anti-Mouse MMP-9 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF909) followed by 1:50 dilution of HRP-conjugated Anti-Goat IgG Secondary Antibody (Catalog # HAF109). This experiment was conducted under reducing conditions and using the 12-230 kDa separation system.

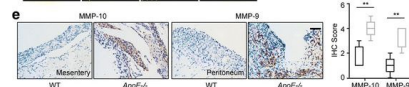


Immunohistochemistry



MMP-9 in Rat Brain. MMP-9 was detected in perfusion fixed frozen sections of rat brain (cingulate cortex) using 1.7 µg/mL Goat Anti-Mouse MMP-9 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF909) overnight at 4 °C. Tissue was stained with the Anti-Goat HRP-DAB Cell & Tissue Staining Kit (brown; Catalog # CTS008) and counterstained with hematoxylin (blue). View our protocol for [Chromogenic IHC Staining of Frozen Tissue Sections](#).

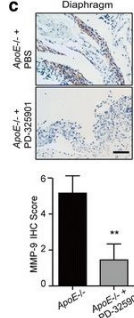
Immunohistochemistry



Detection of Mouse MMP-9 by Immunohistochemistry

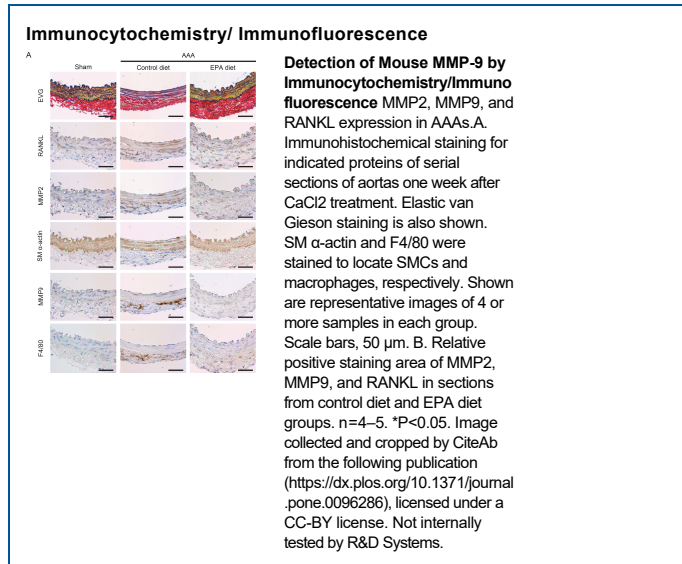
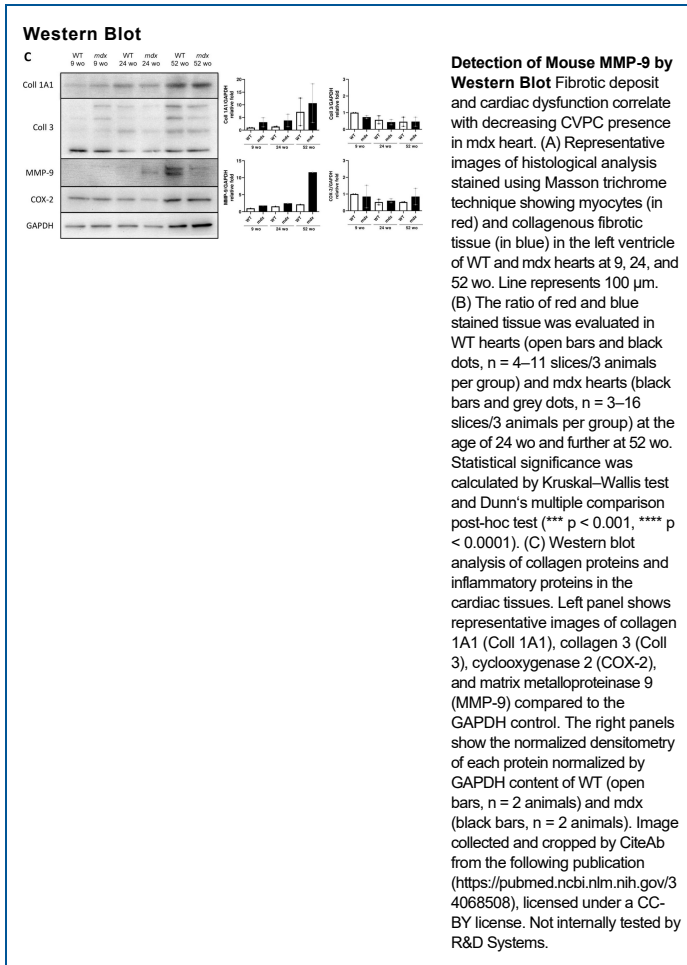
Remodeled ECM enhances the invasive behaviors of ovarian cancer cells. (a) H&E stain of the tumor lesions from WT and ApoE^{-/-} mice at two weeks post ID8 engraftment (left). Graph represents the mean size of the lesions calculated from ten random fields (right). (b) Masson's Trichrome stain of tumor lesions (left). The mean percentage of positive regions in ten random fields was calculated (right). (c) The cytokines/chemokines profile in the supernatants of ascites from WT and ApoE^{-/-} mice. Four groups of mouse cytokine dot-blot arrays are shown. Dot-blots with significant changes are shown in boxed areas (red). (d) The top four pathways enriched among the molecules with significant changes using KEGG pathway analysis. (e) MMP-10 and MMP-9 protein expression in tumor lesions, determined by blinded IHC analysis (left). Box plot of the IHC score of MMP-10 and MMP-9 (right). Box represents the 25th–75th percentile while whiskers indicate the 5th–95th percentile. The black box represents tumor lesions from WT mice and the grey box represents tumor lesions from ApoE^{-/-} mice. Each experiment included data from 5 mice. Bar represents 50 μm. *P < 0.05; **P < 0.005 Image collected and cropped by CiteAb from the following publication (<https://pubmed.ncbi.nlm.nih.gov/29458390>), licensed under a CC-BY license. Not internally tested by R&D Systems.

Immunohistochemistry



Detection of Mouse MMP-9 by Immunohistochemistry

Remodeled ECM promotes malignancy of ovarian cancer via FAK-ERK-MMP activation. (a) Specimens from Fig. 5D were immunoassayed for p-FAKY397 (red), and nuclei were stained with Hoechst (blue). (b) IHC of active ERK (p-p44/42 MAPKThr202/Tyr204) in tumor lesions from WT and ApoE^{-/-} mice with PBS or BAPN treatment two weeks after ID8 engraftment. (c) PBS or PD-325901 was administered to ApoE^{-/-} mice once ID8-Luciferase cells were intraperitoneally injected and treatment continued for one month. The representative images (top) and quantification data (bottom) of MMP-9 protein expression in tumor lesions two months after ID8 engraftment. (d) In vivo luciferase expression was determined two weeks or two months post treatment. Luminescence (right panel) is represented as the radiance (p/s/cm²/sr). Each experiment included data from 4 mice. Bar represents 50 μm. *P < 0.05; **P < 0.005 Image collected and cropped by CiteAb from the following publication (<https://pubmed.ncbi.nlm.nih.gov/29458390>), licensed under a CC-BY license. Not internally tested by R&D Systems.



Immunohistochemistry

Detection of Mouse MMP-9 by Immunohistochemistry BAPN treatment delays ovarian cancer progression by reducing cancer adhesions. (a) Experimental design: PBS or BAPN was intraperitoneally administered to 20-weeks-old female ApoE^{-/-} mice each day and continued for four weeks. A cohort of mice was sacrificed for further experiments. For the remaining mice, the drug treatment was stopped for two weeks before the establishment of ID8 allografts. (b) Hydroxyproline was measured in the plasma and diaphragm. (c) Masson's Trichrome stain after BAPN treatment (left). The positive-staining percentage of 10 random fields was calculated (right). Bar represents 50 μ m. (d) Cells adhesive to the omentum were analyzed four hours after ID8 intraperitoneal injection by fluorescence microscopy (left). The adhesive cells were determined from the total fluorescent intensity after digestion (right). Bar represents 200 μ m. (e) In vivo luciferase measured at two weeks (top) and two months (bottom) post establishment in ApoE^{-/-} mice with PBS or BAPN pre-treatment. Quantification of luminescence is represented as the radiance. (f) MMP-9 expression measured by IHC in tumor lesions of ApoE^{-/-} mice with PBS or BAPN treatment. Each experiment includes data from 4 mice. Bar represents 50 μ m. *P < 0.05; **P < 0.005. Image collected and cropped by CiteAb from the following publication (<https://pubmed.ncbi.nlm.nih.gov/29458390>), licensed under a CC-BY license. Not internally tested by R&D Systems.

Immunohistochemistry

Detection of MMP-9 in Mouse Thymus. MMP-9 was detected in immersion fixed paraffin-embedded sections of mouse thymus using Goat Anti-Mouse MMP-9 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF909) at 1.7 μ g/ml for 1 hour at room temperature followed by incubation with the Anti-Goat IgG VisUCyte™ HRP Polymer Antibody (Catalog # VC004). Before incubation with the primary antibody, tissue was subjected to heat-induced epitope retrieval using VisUCyte Antigen Retrieval Reagent-Basic (Catalog # VCT5021). Tissue was stained using DAB (brown) and counterstained with hematoxylin (blue). Specific staining was localized to the cytoplasm and macrophages. 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.
Stability & Storage	<p>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</p> <ul style="list-style-type: none"> • 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 are a family of zinc and calcium dependent endopeptidases with the combined ability to degrade all the components of the extracellular matrix. MMP-9 (gelatinase B) can degrade a broad range of substrates including gelatin, collagen types IV and V, elastin, and proteoglycan core protein. It is believed to act synergistically with interstitial collagenase (MMP-1) in the degradation of fibrillar collagens as it degrades their denatured gelatin forms. MMP-9 is produced by keratinocytes, monocytes, macrophages, and PMN leukocytes. MMP-9 is present in most cases of inflammatory responses. Structurally, MMP-9 may be divided into five distinct domains: a pro-domain which is cleaved upon activation, a gelatin-binding domain consisting of three contiguous fibronectin type II units, a catalytic domain containing the zinc binding site, a proline-rich linker region, and a carboxyl terminal hemopexin-like domain. Compared to the human MMP-9 (Catalog # 911-MP), the mouse enzyme contains extra sequences in the linker region and in the hemopexin-like domain, respectively.