Human MMP-3 Antibody

Monoclonal Mouse IgG_1 Clone # 50647

Catalog Number: MAB513

DESCRIPTION

Species Reactivity	Human
Specificity	Detects both the pro and active forms of human MMP-3 in direct ELISAs and Western blots. In direct ELISAs, 50-100% cross-reactivity with recombinant mouse MMP-3 is observed, 10% cross-reactivity with recombinant human (rh) MMP-10 is observed and no cross-reactivity with rhMMP-1, -2, -7, -8, -9, -12 or -13 is observed.
Source	Monoclonal Mouse IgG_1 Clone # 50647
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Chinese hamster ovary cell line CHO-derived recombinant human MMP-3 Tyr18-Cys477 Accession # P08254
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 either lyophilized or as a 0.2 μm filtered solution in PBS.

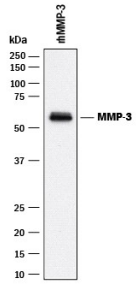
APPLICATIONS

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	1 µg/mL	See Below
Immunocytochemistry	8-25 µg/mL	See Below
Immunohistochemistry	8-25 µg/mL	See Below
Intracellular Staining by Flow Cytometry	0.25 µg/10^6 cells	See Below
CyTOF-ready	Ready to be labeled using established conjugation methods. No BSA or other carrier proteins that could interfere with conjugation.	

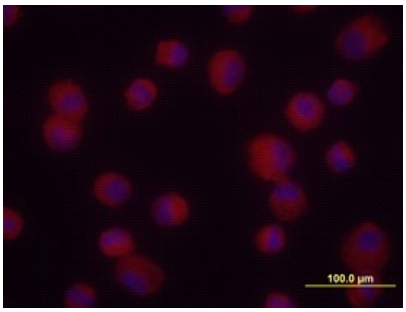
DATA

Western Blot



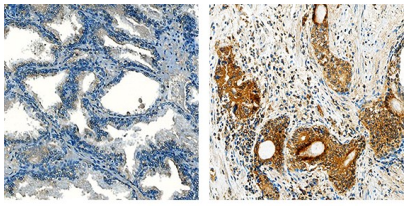
Detection of Human MMP-3 by Western Blot. Western blot shows Recombinant Human MMP-3 Westrern Blot Standard Protein (2 µL, Catalog # WBC015). PVDF membrane was probed with 1 µg/mL of Mouse Anti-Human MMP-3 Monoclonal Antibody (Catalog # MAB513) followed by HRP-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # HAF018). A specific band was detected for MMP-3 at approximately 55 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.

Immunocytochemistry



MMP-3 in MG-63 Human Cell Line. MMP-3 was detected in immersion fixed MG-63 human osteosarcoma cell line using 10 µg/mL Mouse Anti-Human MMP-3 Monoclonal Antibody (Catalog # MAB513) for 3 hours at room temperature. Cells were stained with the NorthernLights™ 557-conjugated Anti-Mouse IgG Secondary Antibody (red; Catalog # NL007) and counterstained with DAPI (blue). View our protocol for Fluorescent ICC Staining of Cells on Coverslips.

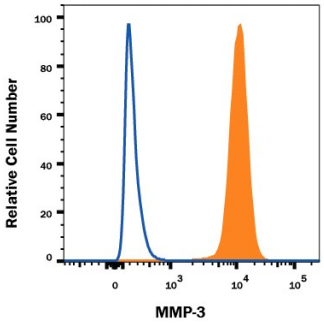
Immunohistochemistry



Normal Tissue Cancer

MMP-3 in Human Prostate and Human Prostate Cancer Tissue. MMP-3 was detected in immersion fixed paraffin-embedded sections of normal human prostate and human prostate cancer tissue using Mouse Anti-Human MMP-3 Monoclonal Antibody (Catalog # MAB513) at 15 µg/mL overnight at 4 °C. 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 cytoplasm in cancer cells (right panel). View our protocol for Chromogenic IHC Staining of Paraffin-embedded Tissue Sections.

Intracellular Staining by Flow Cytometry



Detection of MMP-3 in MG-63 Human Cell Line by Flow Cytometry. MG-63 human osteosarcoma cell line was stained with Mouse Anti-Human MMP-3 Monoclonal Antibody (Catalog # MAB513, filled histogram) or isotype control antibody (Catalog # MAB002, open histogram), followed by Allophycocyanin-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # F0101B). To facilitate intracellular staining, cells were fixed with Flow Cytometry Fixation Buffer (Catalog # FC004) and permeabilized with Flow Cytometry Permeabilization/Wash Buffer I (Catalog # FC005). View our protocol for Staining Intracellular Molecules.

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Human MMP-3 Antibody

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Catalog Number: MAB513

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 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 are a family of zinc and calcium dependent endopeptidases with the combined ability to degrade all the components of the extracellular matrix. MMP-3 (stromelysin-1), can degrade a broad range of substrates including collagen α chains, aggrecan, laminin, fibronectin, elastin, casein, α-1 antitrypsin, myelin basic protein, IL-1β, IGFBP-3, pro MMP-1, pro MMP-7, pro MMP-8, pro MMP-9 and pro MMP-13. MMP-3 does not cleave the triple helical region of interstitial collagens, a characteristic which distinguishes the stromelysins from the collagenases. The MMP-3 substrate repertoire extends beyond extracellular matrix proteins and implicates MMP-3 in roles other than direct tissue remodelling, for instance, enzyme cascades and cytokine regulation. MMP-3 is expressed by fibroblasts, chrondrocytes, osteoblasts, endothelial cells, smooth muscle cells and macrophages. Structurally, MMP-3 may be divided into several distinct domains; a pro-domain which is cleaved upon activation; a catalytic domain containing the zinc binding site; a short hinge region and a carboxyl terminal (hemopexin-like) domain.

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