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MMP14 Antibody (N-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP6198a

Product Information

Application	WB, IHC-P, FC, E
Primary Accession	P50281
Other Accession	Q10739, Q9XT90, P53690, Q9GLE4, NP_004986
Reactivity	Human, Mouse, Rat
Predicted	Mouse, Rat, Pig, Bovine
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	65894
Antigen Region	145-174

Additional Information

Gene ID	4323
Other Names	Matrix metalloproteinase-14, MMP-14, MMP-X1, Membrane-type matrix metalloproteinase 1, MT-MMP 1, MTMMP1, Membrane-type-1 matrix metalloproteinase, MT1-MMP, MT1MMP, MMP14
Target/Specificity	This MMP14 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 145-174 amino acids from the N-terminal region of human MMP14.
Dilution	WB~~1:1000 IHC-P~~1:100~500 FC~~1:10~50 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	MMP14 Antibody (N-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	MMP14
Function	Endopeptidase that degrades various components of the extracellular

	matrix such as collagen (PubMed:8015608). Essential for pericellular collagenolysis and modeling of skeletal and extraskeletal connective tissues during development (By similarity). Activates progelatinase A/MMP2, thereby acting as a positive regulator of cell growth and migration (PubMed:22065321, PubMed:8015608). Involved in the formation of the fibrovascular tissues in association with pro-MMP2 (PubMed:12714657, PubMed:22065321). May be involved in actin cytoskeleton reorganization by cleaving PTK7 (PubMed:20837484). Acts as a regulator of Notch signaling by mediating cleavage and inhibition of DLL1 (PubMed:21572390). Cleaves ADGRB1 to release vasculostatin-40 which inhibits angiogenesis (PubMed:22330140). Acts as a negative regulator of the GDF15-GFRAL aversive response by mediating cleavage and inactivation of GFRAL (PubMed:35177851).
Cellular Location	Cell membrane; Single-pass type I membrane protein. Melanosome. Cytoplasm Note=Identified by mass spectrometry in melanosome fractions from stage I to stage IV (PubMed:17081065). Forms a complex with BST2 and localizes to the cytoplasm (PubMed:17081065)
Tissue Location	Expressed in stromal cells of colon, breast, and head and neck. Expressed in lung tumors.

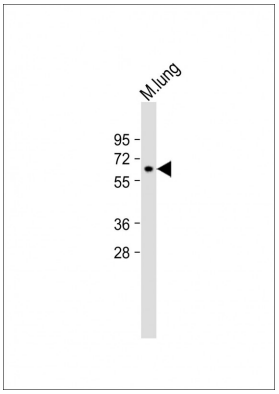
Background

Proteins of the matrix metalloproteinase (MMP) family are involved in the breakdown of extracellular matrix in normal physiological processes, such as embryonic development, reproduction, and tissue remodeling, as well as in disease processes, such as arthritis and metastasis. Most MMPs are secreted as inactive proproteins which are activated when cleaved by extracellular proteinases. MMP14 seems to specifically activate progelatinase A, and may thus trigger invasion by tumor cells by activating progelatinase A on the tumor cell surface. Expression is significant in stromal cells of colon, breast, and head and neck.

References

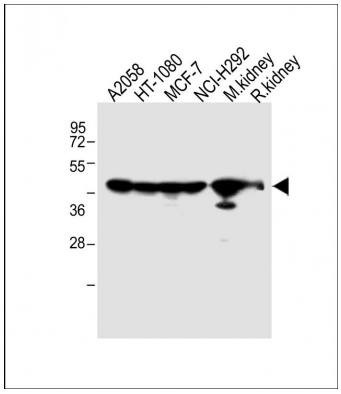
Will, H., et al., Eur. J. Biochem. 231(3):602-608 (1995).
Takino, T., et al., Gene 155(2):293-298 (1995).
Okada, A., et al., Proc. Natl. Acad. Sci. U.S.A. 92(7):2730-2734 (1995).
Sato, H., et al., Nature 370(6484):61-65 (1994).

Images

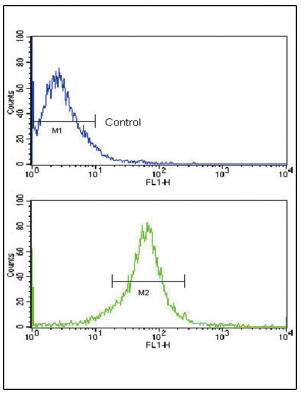


Anti-MMP14 Antibody (N-term) at 1:2000 dilution + Mouse lung lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 66 kDa Blocking/Dilution buffer: 5% NFDM/TBST.

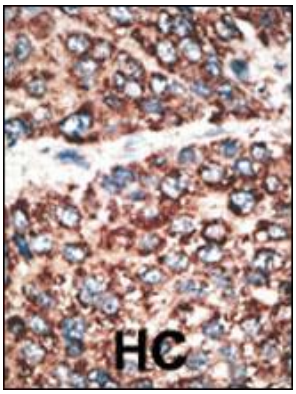
All lanes : Anti-MMP14 Antibody (N-term) at 1:2000 dilution Lane 1: A2058 whole cell lysate Lane 2: HT-1080 whole cell lysate Lane 3: MCF-7 whole cell lysate Lane 4: NCI-H292 whole cell lysate Lane 5: Mouse kidney lysate



Lane 5: Rat kidney lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 66 kDa Blocking/Dilution buffer: 5% NFDM/TBST.



Flow cytometric analysis of MCF-7 cells using MMP14 Antibody (N-term) (bottom histogram) compared to a negative control cell (top histogram). FITC-conjugated goat-anti-rabbit secondary antibodies were used for the analysis.



Formalin-fixed and paraffin-embedded human cancer tissue reacted with the primary antibody, which was peroxidase-conjugated to the secondary antibody, followed by DAB staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated. BC = breast carcinoma; HC = hepatocarcinoma.

Citations

- Regulation of CXCR4-mediated invasion by DARPP-32 in gastric cancer cells.
- Targeting the MMP-14/MMP-2/integrin αvβ3 axis with multispecific N-TIMP2-based antagonists for cancer therapy.
- Nkx2-5 Is Expressed in Atherosclerotic Plaques and Attenuates Development of Atherosclerosis in Apolipoprotein E-Deficient Mice.