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Datasheet for 600-401-MJ9

MMP2 Antibody

Overview

Description:	Anti-MMP2 (RABBIT) Antibody - 600-401-MJ9
Item No.:	600-401-MJ9
Size:	100 µg
Applications:	ELISA, IF, IHC, WB
Reactivity:	Human
Host Species:	Rabbit

Product Details

Background:	Matrix metalloproteases (matrix metalloproteinase, MMPs), also called matrixins, are zinc-dependent endopeptidases and the major proteases in ECM degradation. MMPs can degrade several extracellular molecules and several bioactive molecules. MMP2 is a gelatinase A, type IV collagenase, that contains three fibronectin type II repeats in its catalytic site that allow binding of denatured type IV and V collagen and elastin. Unlike most MMP family members, activation of this protein can occur on the cell membrane. This enzyme can be activated extracellularly by proteases, or, intracellularly by its S-glutathiolation with no requirement for proteolytical removal of the pro-domain. This protein is thought to be involved in multiple pathways including roles in the nervous system, endometrial menstrual breakdown, regulation of vascularization, metastasis, tissue repair, inflammation, and atherosclerotic plaque rupture. As well as degrading extracellular matrix proteins, it can also act on several nonmatrix proteins such as big endothelial 1 and beta-type CGRP promoting vasoconstriction. MMP2 also cleaves KISS at a Gly- -Leu bond. It appears to have a role in myocardial cell death pathways and contributes to myocardial oxidative stress by regulating the activity of GSK3beta. It cleaves GSK3beta in vitro and is involved in the formation of the fibrovascular tissues in association with MMP14. PEX, the C-terminal non-catalytic fragment of MMP2, possesses anti-angiogenic and anti-tumor properties and inhibits cell migration and cell adhesion to FGF2 and vitronectin. MMP2 is a ligand for integrin/beta3 on the surface of blood vessels. Anti-MMP2 antibody is useful for researchers interested in osteolysis, nodulosis, arthropathy, Apoptosis Research, and Cytokines & Growth Factor Antibodies.
Synonyms:	Rabbit Anti-MMP2 Antibody, Rabbit Anti-Matrix Metallopeptidase 2 Antibody, Matrix Metalloproteinase-2, CLG4A, MMP-2, TBE-1, Matrix Metalloproteinase 2 Gelatinase A 72kDa Type IV Collagenase), Matrix Metallopeptidase 2 Gelatinase A 72kDa Type IV Collagenase), Matrix Metalloproteinase-II, 72 KDa Type IV Collagenase, Collagenase Type IV-A, Neutrophil Gelatinase, 72 KDa Gelatinase, Gelatinase A, EC 3.4.24.24, MMP-II, MONA, CLG4

Host Species:	Rabbit
Clonality:	Polyclonal
Format:	IgG

Target Details

Gene Name:	MMP2
Reactivity:	Human
Immunogen Type:	Conjugated Peptide
Immunogen:	Anti-MMP2 antibody was prepared from whole rabbit serum produced by repeated immunizations with a synthetic peptide corresponding to an internal portion of human MMP2 conjugated to Keyhole Limpet Hemocyanin (KLH).
Purity/Specificity:	This affinity purified antibody is directed against human MMP2. This product was affinity purified from monospecific antiserum by immunoaffinity purification. A BLAST analysis was used to suggest cross-reactivity with the antigen based on 100% homology with the immunizing sequence to mouse, rat, bovine, and Oryctolagus cuniculus.
Relevant Links:	• UniProtKB - P08253 • NCBI - NP_001121363.1 • GeneID - 4313

Application Details

Tested Applications:	ELISA, IF, IHC, WB
Application Note:	Anti-MMP2 Antibody has been tested in ELISA, WB, IF, and IHC. Expect a band at ~ 65, 74kDa in western blot using appropriate lysates. Positive control used: Human placenta and Human lung lysates, as well as HEK293T MMP2 overexpressed lysate in WB; HepG2 and U87MG cells for IF; Human metastatic breast carcinoma in lymph nodes for IHC.
Assay Dilutions:	All assays should be optimized by the user. Recommended dilutions (if any) may be listed below.
ELISA:	1:10,000 - 1:50,000
IF:	15 µg/ml
IHC:	1:100
WB:	1:1000

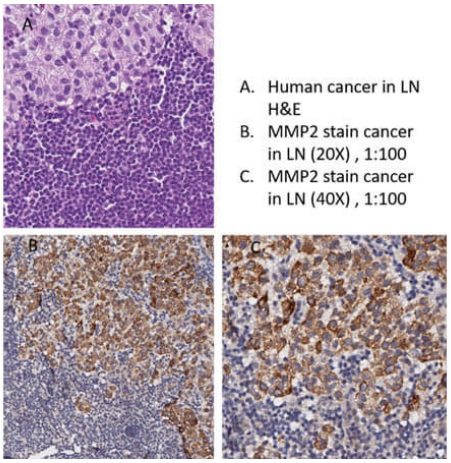
Formulation

Physical State:	Liquid (sterile filtered)
Concentration:	1.0 mg/ml by UV absorbance at 280 nm
Buffer:	0.02 M Potassium Phosphate, 0.15 M Sodium Chloride, pH 7.2
Preservative:	0.01% (w/v) Sodium Azide
Stabilizer:	None

Shipping & Handling

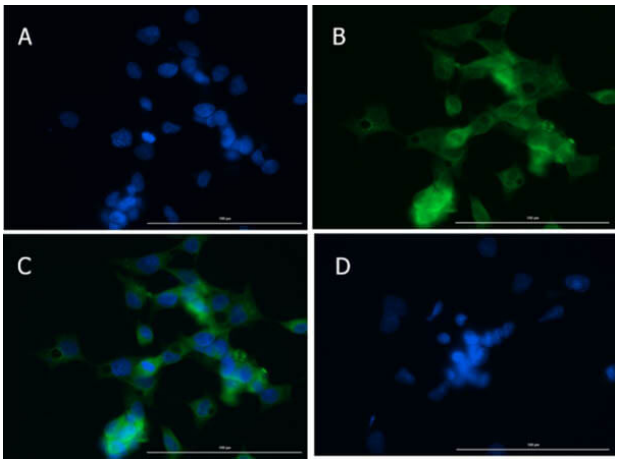
Shipping Condition:	Dry Ice
Storage Condition:	Store vial at -20° C prior to opening. Aliquot contents and freeze at -20° C or below for extended storage. Avoid cycles of freezing and thawing. Centrifuge product if not completely clear after standing at room temperature. This product is stable for several weeks at 4° C as an undiluted liquid. Dilute only prior to immediate use.
Expiration:	Expiration date is one (1) year from date of receipt.

Images

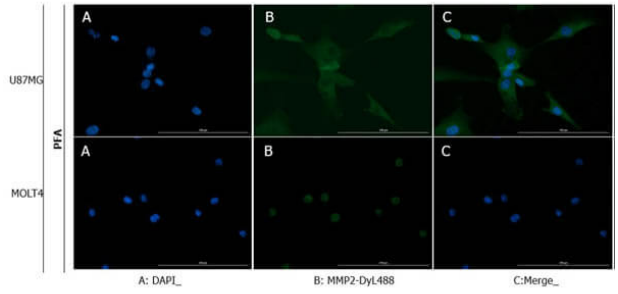


A. Human cancer in LN H&E
B. MMP2 stain cancer in LN (20X) , 1:100
C. MMP2 stain cancer in LN (40X) , 1:100

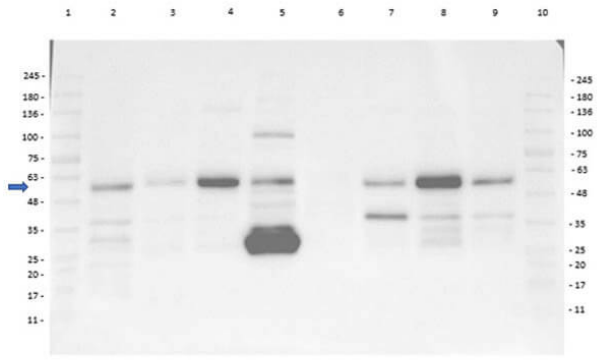
Immunohistochemistry
Immunohistochemistry of Rabbit Anti-MMP2 Antibody. Tissue: human metastatic breast carcinoma in lymph nodes. Fixative: none. Antigen Retrieval: HIER using Citrate Buffer for 20 minutes. Primary Antibody: Anti-MMP2 at 1:100 at RT for 30 minutes. Secondary Antibody: Anti-Rabbit Poly-HRP-IgG Ready-to-Use at RT for 8 minutes. Counterstain: Hematoxylin. Substrate: DAB. Result: MMP2 showed strong staining in metastatic breast tumor cells within a lymph node but it did not stain the background lymphoid cells.



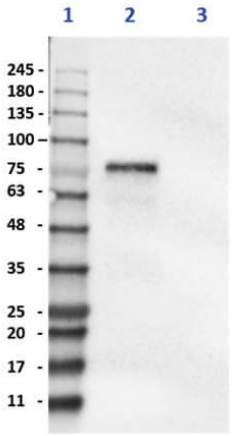
Immunofluorescence Microscopy
Immunofluorescence of Rabbit Anti-MMP2 Antibody. Cell Line: HepG2 Cells. Fixative: 4% PFA. Permeabilization: 0.3% Triton X-100. Primary Antibody: Anti-MMP2 at 15µg/mL overnight at 2-8°C. Secondary Antibody: Donkey Anti-Rabbit IgG DyLight™488 (p/n 611-741-127) at 15µg/mL for 1 hr at RT. Nuclear counterstain: DAPI. Staining: (A). DAPI. (B). MMP2 + secondary. (C). Merge A+B. (D). secondary only. Expected Localization: cytoplasmic .



Immunofluorescence Microscopy
Immunofluorescence of Rabbit Anti-MMP2 Antibody. Cell Line: (top) U87MG Cells [+]; (bottom) MOLT4 Cells [-]. Fixative: 4% PFA. Permeabilization: 0.3% Triton X-100. Primary Antibody: Anti-MMP2 at 15µg/mL overnight at 2-8°C. Secondary Antibody: Donkey Anti-Rabbit IgG DyLight™488 (p/n 611-741-127) at 5µg/mL for 1 hr at RT. Nuclear counterstain: DAPI. Staining: (A). DAPI. (B). MMP2 + secondary. (C). Merge A+B. Expected Localization: cytoplasmic.



Western Blot
Western Blot of Rabbit Anti-MMP2 Antibody. Lane 1 and 10: Opal Pre-stained Molecular Weight Ladder (p/n MB-210-0500). Lane 2: Human Spleen Whole Tissue Lysate [moderate]. Lane 3: Human Small Intestine Whole Tissue Lysate [-]. Lane 4: Human Placenta Whole Tissue Lysate [+]. Lane 5: Human Skeletal Muscle Whole Tissue Lysate (Adult) [-]. Lane 6: Human Brain Cerebellum Whole Cell Lysate [-]. Lane 7: Human Lung Whole Tissue Lysate [+]. Lane 8: Human Tonsil Whole Tissue Lysate [-]. Lane 9: Human Thymus Whole Tissue Lysate. Primary Antibody: Anti-MMP2 at 1:1000 overnight at 2-8°C. Secondary Antibody: Goat anti-Rabbit HRP (p/n 611-103-122) at 1:40,000 at RT for 30 minutes. Block: BlockOut Buffer (p/n MB-073). Exposure: 15 sec. Predicted MW: ~65, ~73kDa. Observed MW: ~60kDa arrow. This antibody is recognizing the “active” form of MMP2 which is generally seen in the 60-70 kDa range.



Western Blot

Western Blot of Rabbit Anti-MMP2 Antibody. Lane 1: Opal Pre-stained Molecular Weight Ladder (p/n MB-210-0500). Lane 2: MMP2 HEK293 Over Expressing Lysate C-terminal DDK tagged [+]. Lane 3: HEK293 lysate (empty vector) [-]. Primary Antibody: Anti-MMP2 at 1:1000 overnight at 2-8°C. Secondary Antibody: Goat anti-Rabbit HRP (p/n 611-103-122) at 1:70,000 at RT for 30 minutes. Block: 5% BLOTTO (p/n B501-0500). Exposure: 3 sec. Predicted MW: ~70-75kDa for overexpressing lysate. Observed MW: ~75kDa.

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