abcam

Product datasheet

Anti-MMP2 antibody [EPR1184] ab92536

Recombinant RabMAb

5 Abreviews 44 References 7 Images

Overview

Product name	Anti-MMP2 antibody [EPR1184]
Description	Rabbit monoclonal [EPR1184] to MMP2
Host species	Rabbit
Tested applications	**Suitable for:** ICC/IF, WB, Flow Cyt **Unsuitable for:** IHC-P
Species reactivity	**Reacts with:** Mouse, Rat, Human
Immunogen	Synthetic peptide within Human MMP2 aa 550-650 (C terminal). The exact sequence is proprietary. Database link: P08253
Positive control	WB: L6, Raw264.7, fetal heart and NIH/3T3 cell lysates ICC/IF: PC-3 cells
General notes	A trial size is available to purchase for this antibody. Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMab® patents. **We are constantly working hard to ensure we provide our customers with best in class antibodies. As a result of this work we are pleased to now offer this antibody in purified format. We are in the process of updating our datasheets. The purified format is designated 'PUR' on our product labels. If you have any questions regarding this update, please contact our Scientific Support team.** This product is a recombinant rabbit monoclonal antibody.

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C. Stable for 12 months at -20°C.
Storage buffer	pH: 7.20 Preservative: 0.01% Sodium azide Constituents: 59% PBS, 40% Glycerol, 0.05% BSA

Purity	Protein A purified
Clonality	Monoclonal
Clone number	EPR1184
Isotype	IgG

Applications

Our Abpromise guarantee covers the use of **ab92536** in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Application	Abreviews	Notes
ICC/IF		1/250.
WB	★★★★☆	1/1000 - 1/5000. Predicted molecular weight: 74 kDa. For Lysate preparation protocol, please refer to the protocol here (downloadable copy).
Flow Cyt		1/400. **For unpurified, use 1/70.** ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

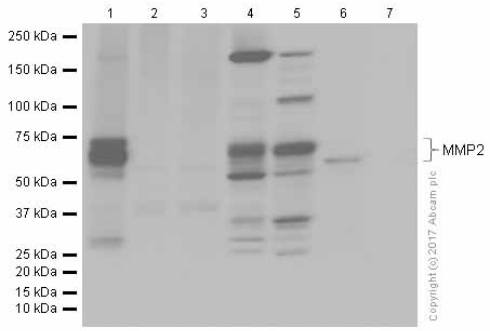
Application notes	Is unsuitable for IHC-P.

Target

Function	Ubiquitinous metalloproteinase that is involved in diverse functions such as remodeling of the vasculature, angiogenesis, tissue repair, tumor invasion, inflammation, and atherosclerotic plaque rupture. As well as degrading extracellular matrix proteins, can also act on several nonmatrix proteins such as big endothelial 1 and beta-type CGRP promoting vasoconstriction. Also cleaves KISS at a Gly- -Leu bond. Appears to have a role in myocardial cell death pathways. Contributes to myocardial oxidative stress by regulating the activity of GSK3beta. Cleaves GSK3beta in vitro. PEX, the C-terminal non-catalytic fragment of MMP2, posseses anti-angiogenic and anti-tumor properties and inhibits cell migration and cell adhesion to FGF2 and vitronectin. Ligand for integrinv/beta3 on the surface of blood vessels.
Tissue specificity	Produced by normal skin fibroblasts. PEX is expressed in a number of tumors including gliomas, breast and prostate.
Involvement in disease	Defects in MMP2 are the cause of Torg-Winchester syndrome (TWS) [MIM:259600]; also known as multicentric osteolysis nodulosis and arthropathy (MONA). TWS is an autosomal recessive osteolysis syndrome. It is severe with generalized osteolysis and osteopenia. Subcutaneous nodules are usually absent. Torg-Winchester syndrome has been associated with a number of additional features including coarse face, corneal opacities, patches of thickened, hyperpigmented skin, hypertrichosis and gum hypertrophy. However, these features are not always present and have occasionally been observed in other osteolysis syndromes.
Sequence similarities	Belongs to the peptidase M10A family. Contains 3 fibronectin type-II domains. Contains 4 hemopexin-like domains.

Domain	The conserved cysteine present in the cysteine-switch motif binds the catalytic zinc ion, thus inhibiting the enzyme. The dissociation of the cysteine from the zinc ion upon the activation-peptide release activates the enzyme.
Post-translational modifications	Phosphorylation on multiple sites modulates enzymatic activity. Phosphorylated by PKC in vitro. The propeptide is processed by MMP14 (MT-MMP1) and MMP16 (MT-MMP3). Autocatalytic cleavage in the C-terminal produces the anti-angiogenic peptide, PEX. This processing appears to be facilitated by binding integrinv/beta3.
Cellular localization	Secreted > extracellular space > extracellular matrix. Membrane. Nucleus. Colocalizes with integrin alphaV/beta3 at the membrane surface in angiogenic blood vessels and melanomas. Found in mitochondria, along microfibrils, and in nuclei of cardiomyocytes.

Images



Western blot - Anti-MMP2 antibody [EPR1184] (ab92536)

All lanes : Anti-MMP2 antibody [EPR1184] (ab92536) at 1/1000 dilution

Lane 1 : L6 (Rat skeletal muscle myoblast) whole cell lysates prepared in 1%SDS Hot lysis method with 5% NFDM/TBST
Lane 2 : Mouse liver lysates prepared in RIPA lysis method with 5% NFDM/TBST
Lane 3 : Mouse liver lysates prepared in 1%SDS Hot lysis method with 5% NFDM/TBST
Lane 4 : Raw264.7 (Mouse Abelson murine leukemia virus-induced tumor macrophage) whole cell lysates prepared in RIPA lysis method with 5% NFDM/TBST
Lane 5 : Raw264.7 (Mouse Abelson murine leukemia virus-induced tumor macrophage) whole cell lysates prepared in 1%SDS Hot lysis method with 5% NFDM/TBST
Lane 6 : HepG2 (Human hepatocellular carcinoma epithelial cell) whole cell lysates prepared in RIPA lysis method with 5% NFDM/TBST
Lane 7 : HepG2 (Human hepatocellular carcinoma epithelial cell) whole cell lysates prepared in 1%SDS Hot lysis method with 5% NFDM/TBST

Lysates/proteins at 20 µg per lane.

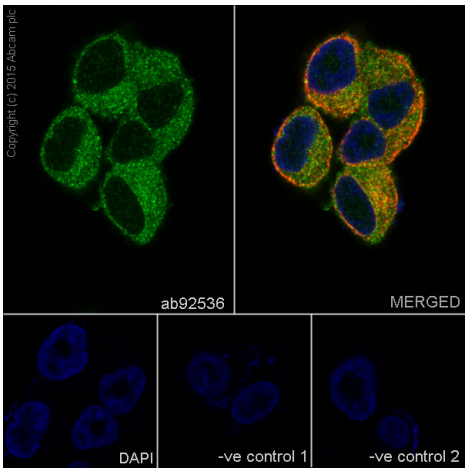
Secondary
All lanes : Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution (Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated)

Predicted band size: 74 kDa
Observed band size: 69,72 kDa
why is the actual band size different from the predicted?

Exposure time: 10 seconds

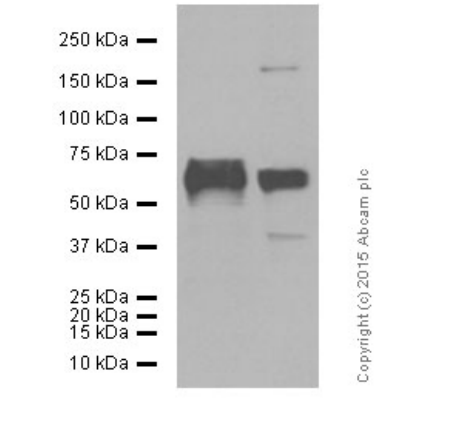
The 72 KDa band is pro-MMP2 and the 69 KDa band is active-MMP2 reported by PMID 11489818 and 22190701.

This antibody shows low affinity in detecting mouse liver and HepG2 lysates which are positive for MMP2 reported by PMID 24096707 and 24297510.



Immunocytochemistry/ Immunofluorescence - Anti-MMP2 antibody [EPR1184] (ab92536)

Immunofluorescence staining of PC-3 cells with purified ab92536 at a working dilution of 1/250, counter-stained with DAPI. The secondary antibody was Alexa Fluor® 488 goat anti-rabbit (ab150077), used at a dilution of 1/1000. ab7291, a mouse anti-tubulin antibody (1/1000), was used to stain tubulin along with ab150120 (Alexa Fluor® 594 goat anti-mouse, 1/1000), shown in the top right hand panel. The cells were fixed in 4% PFA and permeabilized using 0.1% Triton X 100. The negative controls are shown in bottom middle and right hand panels - for negative control 1, purified ab92536 was used at a dilution of 1/500 followed by an Alexa Fluor® 594 goat anti-mouse antibody (ab150120) at a dilution of 1/500. For negative control 2, ab7291 (mouse anti-tubulin) was used at a dilution of 1/500 followed by an Alexa Fluor® 488 goat anti-rabbit antibody (ab150077) at a dilution of 1/400.



Western blot - Anti-MMP2 antibody [EPR1184] (ab92536)

All lanes : Anti-MMP2 antibody [EPR1184] (ab92536) at 1/10000 dilution (purified)

Lane 1 : L6 cell lysate
Lane 2 : NIH/3T3 cell lysate

Lysates/proteins at 20 µg per lane.

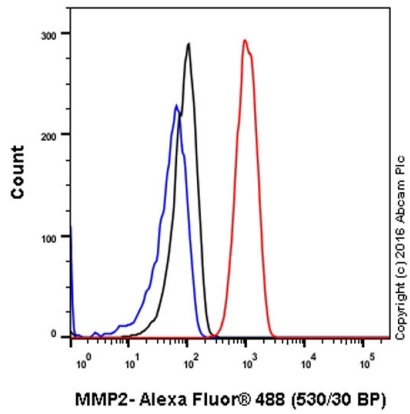
Secondary
All lanes : HRP goat anti-rabbit IgG (H+L) at 1/1000 dilution

Predicted band size: 74 kDa
Observed band size: 64,72 kDa why is the actual band size different from the predicted?

Blocking buffer: 5% NFDM/TBST

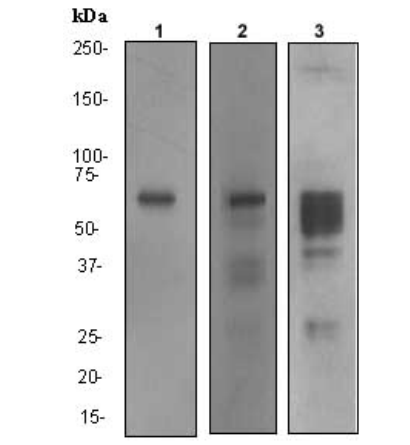
Dilution buffer: 5% NFDM/TBST

72kDa: propeptide; 64kDa: active form



Flow Cytometry - Anti-MMP2 antibody [EPR1184] (ab92536)

Flow Cytometry analysis of PC-3 (human prostate adenocarcinoma) cells labeling MMP2 with purified ab92536 at 1/180 dilution(10ug/ml) (red). Cells were fixed with 4% paraformaldehyde and permeabilised with 90% methanol. A Goat anti rabbit IgG (Alexa Fluor® 488)(1/2000 dilution) was used as the secondary antibody. Rabbit monoclonal IgG (Black) was used as the isotype control, cells without incubation with primary antibody and secondary antibody (Blue) were used as the unlabeled control.



Western blot - Anti-MMP2 antibody [EPR1184] (ab92536)

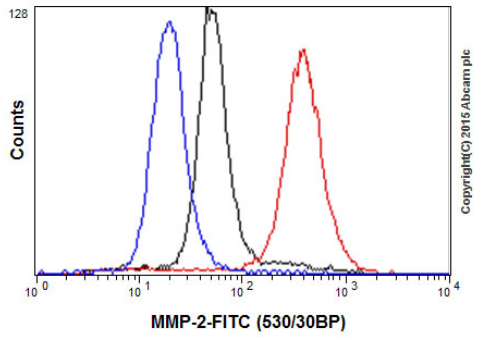
All lanes : Anti-MMP2 antibody [EPR1184] (ab92536) at 1/1000 dilution (unpurified)

Lane 1 : L6 cell lysate
Lane 2 : Fetal heart lysate
Lane 3 : NIH/3T3 cell lysate

Lysates/proteins at 10 µg per lane.

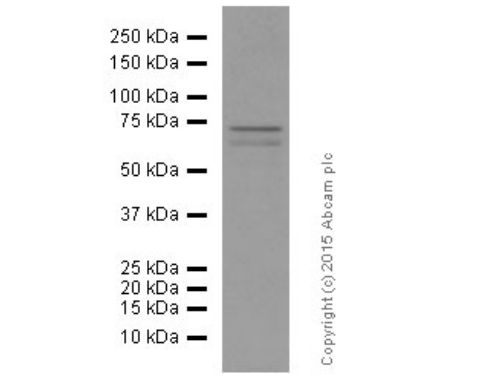
Secondary
All lanes : HRP labelled goat anti-rabbit at 1/2000 dilution

Predicted band size: 74 kDa



Flow Cytometry - Anti-MMP2 antibody [EPR1184] (ab92536)

Overlay histogram showing HeLa cells fixed in 4% PFA and stained with purified ab92536 at a dilution of 1 in 400 (red line). The secondary antibody used was FITC goat anti-rabbit at a dilution of 1 in 500. Rabbit monoclonal IgG was used as an isotype control (black line) and cells incubated in the absence of both primary and secondary antibody were used as a negative control (blue line).



Western blot - Anti-MMP2 antibody [EPR1184] (ab92536)

Anti-MMP2 antibody [EPR1184] (ab92536) at 1/5000 dilution (purified) + human skin at 10 µg

Secondary

HRP goat anti-rabbit IgG (H+L) at 1/1000 dilution

Predicted band size: 74 kDa

Observed band size: 64,72 kDa why is the actual band size different from the predicted?

Blocking buffer: 5% NFDM/TBST

Dilution buffer: 5% NFDM/TBST

72kDa: propeptide; 64kDa: active form

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