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Product datasheet

Anti-MMP2 antibody [6E3F8] ab86607

6 Abreviews 93 References 5 Images

Overview

Product name	Anti-MMP2 antibody [6E3F8]
Description	Mouse monoclonal [6E3F8] to MMP2
Host species	Mouse
Tested applications	**Suitable for:** WB, IHC-P
Species reactivity	**Reacts with:** Mouse, Rat, Human
Immunogen	Recombinant fragment corresponding to Human MMP2 aa 450 to the C-terminus.
Positive control	This antibody gave a positive signal in the following lysates: Human Ovary Tissue; Human Liver Tissue; Mouse Liver Tissue; Rat Spleen Tissue; A375 Whole Cell; NIH3T3 Whole Cell; PC12 Whole Cell.
General notes	This antibody clone is manufactured by Abcam. If you require a custom buffer formulation or conjugation for your experiments, please contact orders@abcam.com. The Life Science industry has been in the grips of a reproducibility crisis for a number of years. Abcam is leading the way in addressing this with our range of recombinant monoclonal antibodies and knockout edited cell lines for gold-standard validation. Please check that this product meets your needs before purchasing. If you have any questions, special requirements or concerns, please send us an inquiry and/or contact our Support team ahead of purchase. Recommended alternatives for this product can be found below, along with publications, customer reviews and Q&As

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 or -80°C. Avoid freeze / thaw cycle.
Storage buffer	pH: 7.40 Preservative: 0.02% Sodium azide Constituents: PBS, 6.97% L-Arginine
Purity	IgG fraction
Clonality	Monoclonal
Clone number	6E3F8

Isotype	IgG2a
Light chain type	kappa

Applications

The Abpromise guarantee Our Abpromise guarantee covers the use of ab86607 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
WB	★★★★★ (4)	Use a concentration of 1 µg/ml. Detects a band of approximately 75 kDa (predicted molecular weight: 74 kDa).
IHC-P		Use a concentration of 1 - 5 µg/ml.

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.

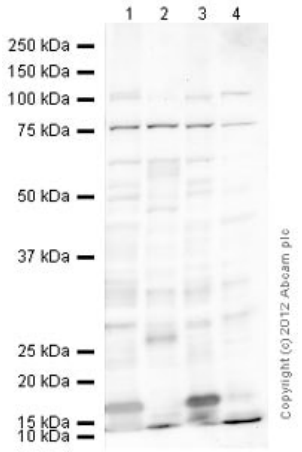
Domain
The conserved cysteine present in the cysteine-switch motif binds the catalytic zinc ion, thus inhibiting the enzyme. The dissociation of the cysteine from the zinc ion upon the activation-peptide release activates the enzyme.

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 [6E3F8] (ab86607)

All lanes : Anti-MMP2 antibody [6E3F8] (ab86607) at 1 µg/ml

Lane 1 : NIH/3T3 (Mouse embryonic fibroblast cell line) Whole Cell Lysate
Lane 2 : Liver (Mouse) Tissue Lysate
Lane 3 : PC-12 (Rat adrenal pheochromocytoma cell line) Whole Cell Lysate
Lane 4 : Spleen (Rat) Tissue Lysate

Lysates/proteins at 10 µg per lane.

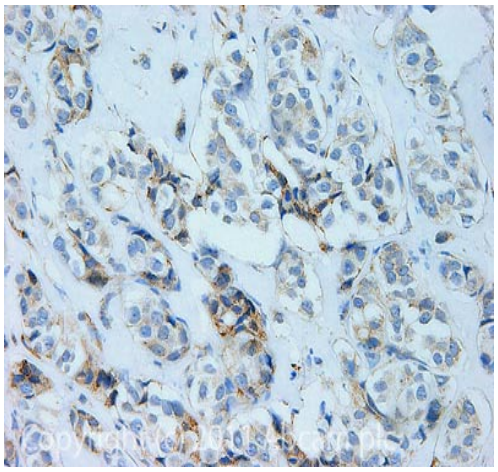
Secondary
All lanes : Goat Anti-Mouse IgG H&L (HRP) preadsorbed (ab97040) at 1/5000 dilution

Developed using the ECL technique.

Performed under reducing conditions.

Predicted band size: 74 kDa
Observed band size: 75 kDa
Additional bands at: 17 kDa. We are unsure as to the identity of these extra bands.

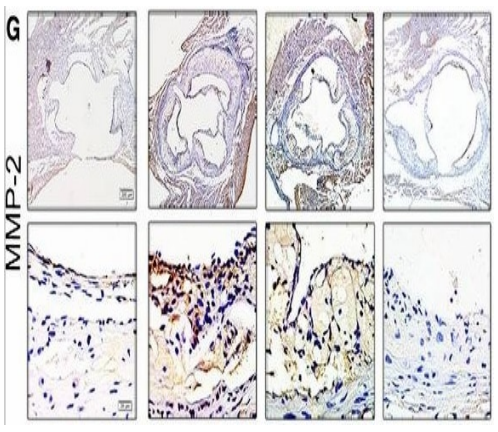
Exposure time: 20 minutes



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-MMP2 antibody [6E3F8] (ab86607)

IHC image of ab86607 staining in human breast adenocarcinoma formalin fixed paraffin embedded tissue section, performed on a Leica Bond™ system using the standard protocol F. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH6, epitope retrieval solution 1) for 20 mins. The section was then incubated with ab86607, 1µg/ml, for 15 mins at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX.

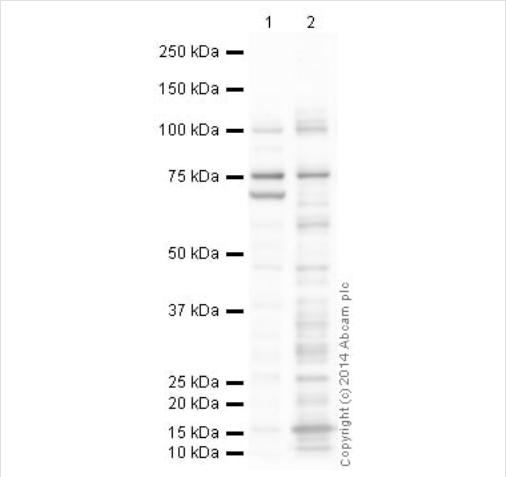
For other IHC staining systems (automated and non-automated) customers should optimize variable parameters such as antigen retrieval conditions, primary antibody concentration and antibody incubation times.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-MMP2 antibody [6E3F8] (ab86607)

Image from Sun H et al., J Cell Mol Med. 2015;19(4):836-49. Fig 6.; doi: 10.1111/jcmm.12521. Reproduced under the Creative Commons license http://creativecommons.org/licenses/by/4.0/.

Immunohistochemical (parraffin-embedded sections) staining for MMP-2 in atherosclerotic lesions of aortic root in from right to left Ad-MIFi, Ad-EGFP, NS control and non-DM mouse control groups using ab86607 at a dilution of 1/200.



Western blot - Anti-MMP2 antibody [6E3F8] (ab86607)

All lanes : Anti-MMP2 antibody [6E3F8] (ab86607) at 1 µg/ml

Lane 1 : Human liver tissue lysate - total protein (ab29889)
Lane 2 : A375 (Human melanoma cell line) Whole Cell Lysate

Lysates/proteins at 10 µg per lane.

Secondary
All lanes : Goat Anti-Mouse IgG H&L (HRP) preadsorbed (ab97040) at 1/50000 dilution

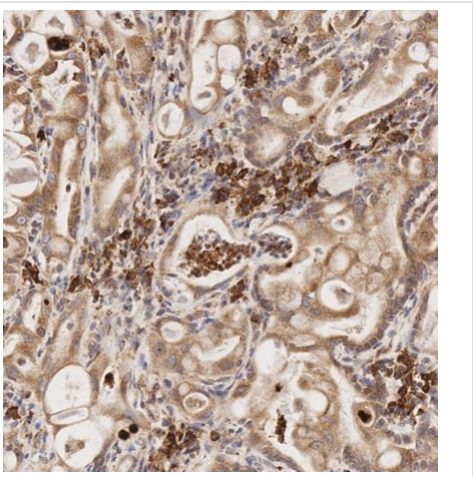
Developed using the ECL technique.

Performed under reducing conditions.

Predicted band size: 74 kDa
Observed band size: 75 kDa
Additional bands at: 100 kDa, 70 kDa. We are unsure as to the identity of these extra bands.

Exposure time: 4 minutes

This blot was produced using a 4-12% Bis-tris gel under the MOPS buffer system. The gel was run at 200V for 50 minutes before being transferred onto a Nitrocellulose membrane at 30V for 70 minutes. The membrane was then blocked for an hour using 2% Bovine Serum Albumin before being incubated with ab86607 overnight at 4°C. Antibody binding was detected using an anti-mouse antibody conjugated to HRP, and visualised using ECL development solution ab133406.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-MMP2 antibody [6E3F8] (ab86607)

Immunohistochemistry of human pancreas carcinoma staining MMP2 with ab86607 at 1µg/ml.

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