OriGene Technologies, Inc.
9620 Medical Center Drive, Ste 200
Rockville, MD 20850
UNITED STATES
Phone: +1-888-267-4436
Fax: +1-301-340-8606
techsupport@origene.com

OriGene Technologies GmbH
Schillerstr. 5
32052 Herford
GERMANY
Phone: +49-5221-34606-0
Fax: +49-5221-34606-11
info-de@origene.com

AF6810 Monoclonal Antibody to MMP-2 - Purified

Alternate names: 72 kDa gelatinase, 72 kDa type IV collagenase, CLG4A, Gelatinase A, MMP2, Matrix metalloproteinase-2, TBE-1

Quantity: 0.1 mg

Concentration: 0.5 mg/ml

Background: The matrix metalloproteinases (MMPs) are a family of at least eighteen secreted and membrane-bound zinc endopeptidases. Collectively, these enzymes can degrade all the components of the extracellular matrix, including fibrillar and non-fibrillar collagens, fibronectin, laminin and basement membrane glycoproteins. All MMPs are synthesized as proenzymes, and most of them are secreted from the cells as proenzymes. Thus, the activation of these proenzymes is a critical step that leads to extracellular matrix breakdown. MMPs are considered to play an important role in wound healing, apoptosis, bone elongation, embryo development, uterine involution, angiogenesis and tissue remodeling, and in diseases such as multiple sclerosis, Alzheimer's, malignant gliomas, lupus, arthritis, periodontis, glumerulonephritis, atherosclerosis, tissue ulceration, and in cancer cell invasion and metastasis. MMP2, also known as Gelatinase A, is a type IV collagenase that specifically cleaves type IV collagen, the major structural component of basement membranes. The metastatic potential of tumor cells has been found to correlate with the activity of this enzyme.

Uniprot ID: P08253

NCBI: NP_001121363.1

GeneID: 4313

Host / Isotype: Mouse / IgG1

Recommended Isotype Controls: SM10P (for use in human samples), AM03095PU-N

Clone: 42-5D11

Immunogen: Synthetic oligopeptide corresponding to amino acid residue 468-483 (VTPRDKPMGPLLVATF) of Human Matrix Metalloproteinase 2 (Human MMP-2, gelatinase A).
Epitope: 468-483 hMMP2.

Format:
State: Liquid purified IgG fraction
Purification: Affinity Chromatography on Protein A
Buffer System: 0.1M Sodium Phosphate buffer, pH 7.0
Preservatives: None
Stabilizers: 0.5% Protease free BSA

Applications:
Western Blot: 1-5 µg/ml.
Immunohistochemistry on Frozen Sections: 1-5 µg/ml.
Immunohistochemistry on Paraffin Sections: 1-5 µg/ml.
Heat induced antigen retrieval with citrat buffer, pH 6.2 using a pressure cooker was

preformed. Sections were blocking using a commercially available casein solution. Signal was generated using a commercially available polymer HRP detection system and DAB.
Other applications not tested. Optimal dilutions are dependent on conditions and should be determined by the user.

Molecular Weight: 72 kDa

Specificity: This Monoclonal *42-5D11* antibody specifically reacts with precursor and active forms of Human MMP-2. Does **not** cross react with Human MMP-1, -3, -9, or -13. Also reacts with Rat, Mouse, and Bovine MMP. Other species not tested.

Species Reactivity: **Tested:** Human, Mouse, Rat, Bovine.

Storage: Upon receipt, store undiluted (in aliquots) at -20°C.
Avoid repeated freezing and thawing.
Shelf life: one year from despatch.

General Readings:

1. Lalu MM, Pasini E, Schulze CJ, Ferrari-Vivaldi M, Ferrari-Vivaldi G, Bachetti T, et al. Ischaemia-reperfusion injury activates matrix metalloproteinases in the human heart. Eur Heart J. 2005 Jan;26(1):27-35. Epub 2004 Nov 30. PubMed PMID: 15615796.
2. Annabi B, Lee YT, Turcotte S, Naud E, Desrosiers RR, Champagne M, et al. Hypoxia promotes murine bone-marrow-derived stromal cell migration and tube formation. Stem Cells. 2003;21(3):337-47. PubMed PMID: 12743328.
3. Attiga FA, Fernandez PM, Weeraratna AT, Manyak MJ, Patierno SR. Inhibitors of prostaglandin synthesis inhibit human prostate tumor cell invasiveness and reduce the release of matrix metalloproteinases. Cancer Res. 2000 Aug 15;60(16):4629-37. PubMed PMID: 10969817.
4. Iizasa T, Fujisawa T, Suzuki M, Motohashi S, Yasufuku K, Yasukawa T, et al. Elevated levels of circulating plasma matrix metalloproteinase 9 in non-small cell lung cancer patients. Clin Cancer Res. 1999 Jan;5(1):149-53. PubMed PMID: 9918213.
5. Romanic AM, White RF, Arleth AJ, Ohlstein EH, Barone FC. Matrix metalloproteinase expression increases after cerebral focal ischemia in rats: inhibition of matrix metalloproteinase-9 reduces infarct size. Stroke. 1998 May;29(5):1020-30. PubMed PMID: 9596253.
6. Nomura H, Fujimoto N, Seiki M, Mai M, Okada Y. Enhanced production of matrix metalloproteinases and activation of matrix metalloproteinase 2 (gelatinase A) in human gastric carcinomas. Int J Cancer. 1996 Feb 20;69(1):9-16. PubMed PMID: 8600068.
7. Nakagawa T, Kubota T, Kabuto M, Sato K, Kawano H, Hayakawa T, et al. Production of matrix metalloproteinases and tissue inhibitor of metalloproteinases-1 by human brain tumors. J Neurosurg. 1994 Jul;81(1):69-77. PubMed PMID: 8207529.
8. Fujimoto N, Mouri N, Iwata K, Ohuchi E, Okada Y, Hayakawa T. A one-step sandwich enzyme immunoassay for human matrix metalloproteinase 2 (72-kDa gelatinase/type IV collagenase) using monoclonal antibodies. Clin Chim Acta. 1993 Nov 30;221(1-2):91-103. PubMed PMID: 8149645.
9. Kawahara E, Okada Y, Nakanishi I, Iwata K, Kojima S, Kumagai S, et al. The expression of invasive behavior of differentiated squamous carcinoma cell line evaluated by an in vitro invasion model. Jpn J Cancer Res. 1993 Apr;84(4):409-18. PubMed PMID: 8514607.

Pictures:

Staining of FFPE Human skin (10x and 40x) with MMP-2 Antibody Cat.-No AF6810 (Clone 42-5D11) at 2 µg/ml. Antibody positive in cytoplasm of interstitial fibroblasts.