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Rabbit Anti-MMP2 antibody

SL0412R

Product Name:	MMP2
Chinese Name:	基质金属蛋白酶2抗体
Alias:	MMP-2; 72 kDa gelatinase; 72kD type IV collagenase; CLG 4; CLG 4A; CLG4; CLG4A; Collagenase Type 4 alpha; Collagenase type IV A; Gelatinase A; Gelatinase alpha; Gelatinase neutrophil; Matrix metallopeptidase 2 gelatinase A 72kDa gelatinase 72kDa type IV collagenase; Matrix metalloproteinase 2 (gelatinase A, 72kDa gelatinase, 72kDa type IV collagenase); Matrix Metalloproteinase 2; Matrix metalloproteinase II; MMP 2; MMP II; MONA; Neutrophil gelatinase; TBE 1; MMP2_HUMAN.
文献引用 PubMed :	**Specific References(11)**|SL0412R has been referenced in 11 publications. **[IF=4.30]**Wu, Kaijie, et al. "PI3K/Akt to GSK3β/β-catenin signaling cascade coordinates cell colonization for bladder cancer bone metastasis through regulating ZEB1 transcription."?Cellular signalling?(2012).**Mouse**. PubMed:22906492 **[IF=4.30]**Wu, Kaijie, et al. "Silibinin inhibits β-catenin/ZEB1 signaling and suppresses bladder cancer metastasis via dual-blocking epithelial-mesenchymal transition and stemness." Cellular Signalling (2013).**WB;Human**. PubMed:24012496 **[IF=2.79]**Qin, YuanHua, et al. "Recombinant human CXCL8 (3-72) K11R/G31P regulates smooth muscle cell proliferation and migration through blockage of interleukin-8 receptor." IUBMB life 65.1 (2013): 67-75.**Mouse**. PubMed:23281038 **[IF=1.91]**Fang, Ming, Xin-Chi Wu, and Wenlong Huang. "Raloxifene Upregulated Mesangial Cell MMP-2 Activity via ER-β Through Transcriptional Regulation." Cell

	Biochemistry and Biophysics (2013): 1-7.**WB;Mouse**. PubMed:23471663 **[IF=3.73]**Zhu, Hongwu, et al. "Activating Transcription Factor 4 Promotes Esophageal Squamous Cell Carcinoma Invasion and Metastasis in Mice and Is Associated with Poor Prognosis in Human Patients." PLoS one 9.7 (2014): e103882.**IHC-P;Human**. PubMed:25078779 **[IF=2.53]**Ni, Wei-Jian, et al. "Renoprotective effects of berberine through regulation of the MMPs/TIMPs system in streptozocin-induced diabetic nephropathy in rats."European Journal of Pharmacology (2015).**WB;Rat**. PubMed:26192633 **[IF=4.17]**Madka, Venkateshwar, et al. "TP53 modulating agent, CP-31398 enhances antitumor effects of ODC inhibitor in mouse model of urinary bladder transitional cell carcinoma." American Journal of Cancer Research 5.10 (2015): 3030.**WB, IHC-P;Mouse**. PubMed:26693057 **[IF=2.30]**Wu, Kaijie, et al. "Silibinin reverses epithelial-to-mesenchymal transition in metastatic prostate cancer cells by targeting transcription factors." Oncology Reports 23.6 (2010): 1545.**WB;Human**. PubMed:20428808 **[IF=0.00]**Hiramoto, K., Y. Yamate, and E. F. Sato. "Long-Term Ultraviolet A Eye Irradiation Causes Retina Denaturation in Mice." Biomedicine Hub 2.1 (2017): 5-5.**WB;Mouse**. PubMed:0 **[IF=2.54]**Wang, Li, et al. "Ghrelin inhibits atherosclerotic plaque angiogenesis and promotes plaque stability in a rabbit atherosclerotic model." Peptides (2017).**IHC-P;Rabbit**. PubMed:28189525 **[IF=3.14]**Varghese, Sheeja, et al. "The inhibitory effect of anti-tumor polysaccharide from Punica granatum on metastasis." International Journal of Biological Macromolecules (2017).**WB;Human**. PubMed:28552725
Organism Species:	Rabbit
Clonality:	Polyclonal
React Species:	Human,Mouse,Rat,Chicken,Pig,Cow,Rabbit,Sheep,

Applications:	WB=1:500-2000ELISA=1:500-1000IHC-P=1:400-800IHC-F=1:400-800Flow-Cyt=1μg/TestIF=1:100-500（Paraffin sections need antigen repair） not yet tested in other applications. optimal dilutions/concentrations should be determined by the end user.
Molecular weight:	72kDa
Cellular localization:	The nucleuscytoplasmicThe cell membraneExtracellular matrixSecretory protein
Form:	Lyophilized or Liquid
Concentration:	1mg/ml
immunogen:	KLH conjugated synthetic peptide derived from human MMP2:31-109/476
Lsotype:	IgG
Purification:	affinity purified by Protein A
Storage Buffer:	0.01M TBS(pH7.4) with 1% BSA, 0.03% Proclin300 and 50% Glycerol.
Storage:	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. The lyophilized antibody is stable at room temperature for at least one month and for greater than a year when kept at -20°C. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.
PubMed:	PubMed
Product Detail:	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 MMP's are secreted as inactive proproteins which are activated when cleaved by extracellular proteinases. This gene encodes an enzyme which degrades type IV collagen, the major structural component of basement membranes. The enzyme plays a role in endometrial menstrual breakdown, regulation of vascularization and the inflammatory response. Mutations in this gene have been associated with Winchester syndrome and Nodulosis-Arthropathy-Osteolysis (NAO) syndrome. Two transcript variants encoding different isoforms have been found for this gene. [provided by RefSeq]. **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. Isoform 2: Mediates the proteolysis of CHUK/IKKA and initiates a primary innate immune response by inducing mitochondrial-nuclear stress signaling with activation of the pro-inflammatory NF-kappaB, NFAT and IRF transcriptional pathways. **Subunit:** Interacts (via the C-terminal hemopexin-like domains-containing region) with the

integrin alpha-V/beta-3; the interaction promotes vascular invasion in angiogenic vessels and melamoma cells. Interacts (via the C-terminal PEX domain) with TIMP2 (via the C-terminal); the interaction inhibits the degradation activity. Interacts with GSK3B.

Subcellular Location:
Isoform 1: Secreted, extracellular space, extracellular matrix. Membrane. Nucleus. Note=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.
Isoform 2: Cytoplasm. Mitochondrion.

Tissue Specificity:
Produced by normal skin fibroblasts. PEX is expressed in a number of tumors including gliomas, breast and prostate.

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.

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.

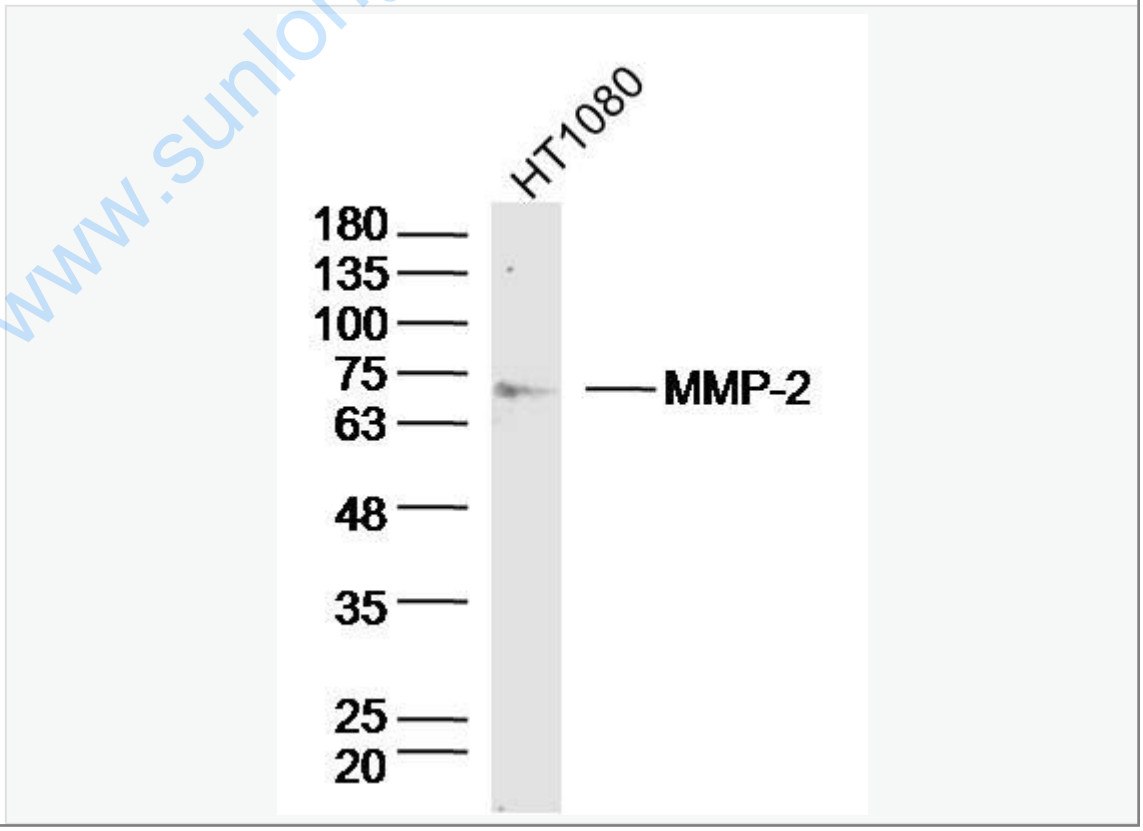
Similarity:
Belongs to the peptidase M10A family.
Contains 3 fibronectin type-II domains.
Contains 4 hemopexin-like domains.

SWISS:
P08253

Gene ID:
4313

Database links:

Entrez Gene: 386583Chicken

	Entrez Gene: 282872Cow Entrez Gene: 403733Dog Entrez Gene: 4313Human Entrez Gene: 17390Mouse Entrez Gene: 397391Pig Entrez Gene: 81686Rat Omim: 120360Human **Important Note:** This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications. Synthesis and Degradation（Synthesis and Degradation）基质金属蛋白酶(matrix metalloproteinases, MMPs)MMP2是一族依赖锌离子而降解各种Extracellular matrix的蛋白酶，亦称IV型胶原酶或称明胶酶A，其主要功能为降解IV型胶原，因而它在Tumour细胞突破基底膜屏障和浸润转移中起重要作用。目前主要用于各种恶性Tumour(如乳腺癌、胃肠道癌、卵巢癌、膀胱癌等)中的基底膜检测与转移浸润的研究。
Picture:	

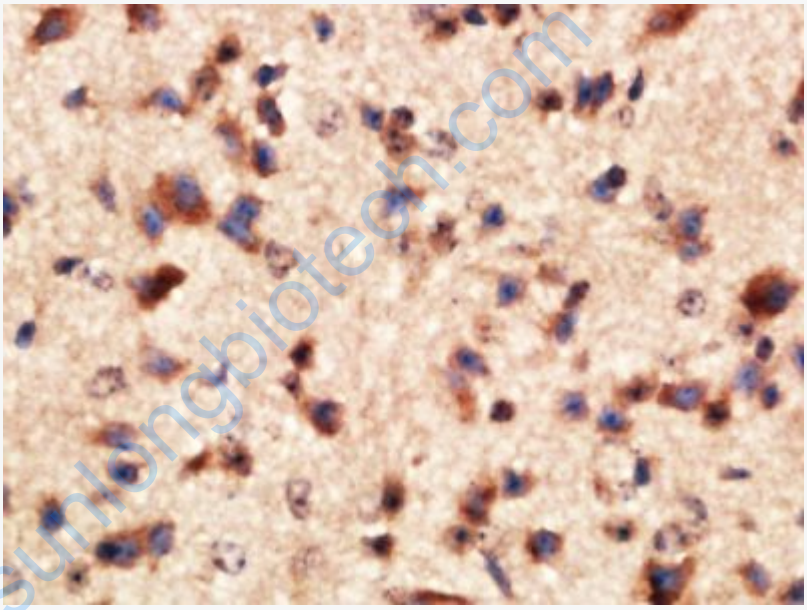
Sample: HT1080 Cell (Human) Lysate at 40 ug

Primary: Anti-MMP2 (SL0412R) at 1/300 dilution

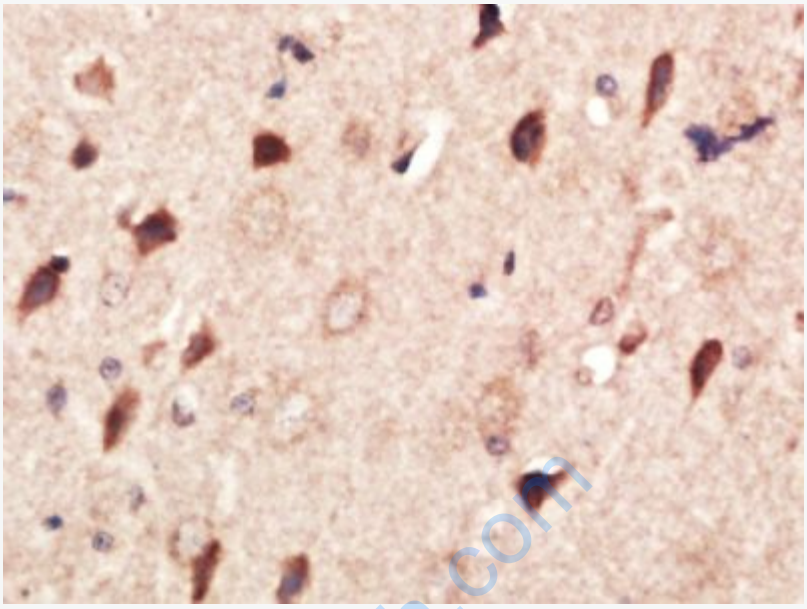
Secondary: IRDye800CW Goat Anti-Rabbit IgG at 1/20000 dilution

Predicted band size: 72 kD

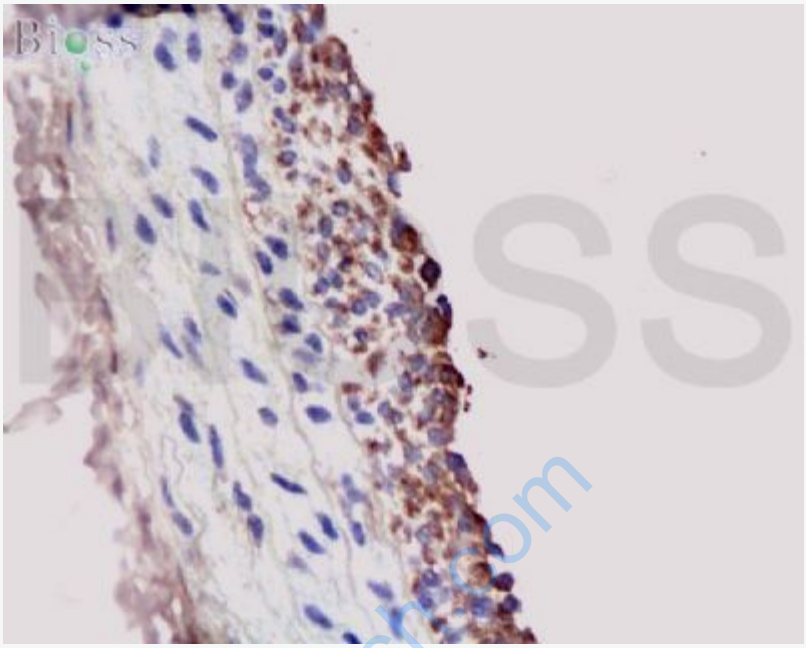
Observed band size: 72 kD



Paraformaldehyde-fixed, paraffin embedded (Mouse brain); Antigen retrieval by boiling in sodium citrate buffer (pH6.0) for 15min; Block endogenous peroxidase by 3% hydrogen peroxide for 20 minutes; Blocking buffer (normal goat serum) at 37°C for 30min; Antibody incubation with (MMP2) Polyclonal Antibody, Unconjugated (SL0412R) at 1:400 overnight at 4°C, followed by operating according to SP Kit(Rabbit) (sp-0023) instructions and DAB staining.

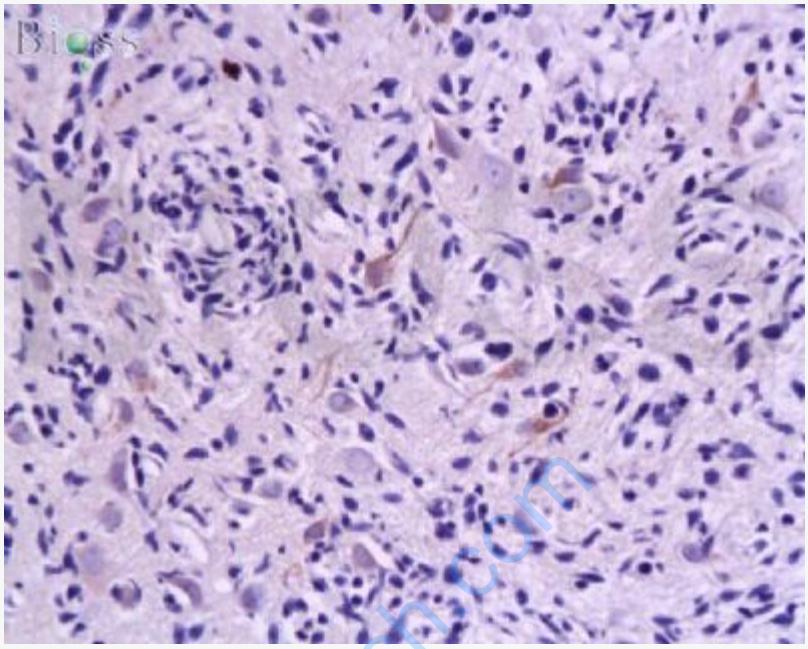


Paraformaldehyde-fixed, paraffin embedded (Rat brain); Antigen retrieval by boiling in sodium citrate buffer (pH6.0) for 15min; Block endogenous peroxidase by 3% hydrogen peroxide for 20 minutes; Blocking buffer (normal goat serum) at 37°C for 30min; Antibody incubation with (MMP2) Polyclonal Antibody, Unconjugated (SL0412R) at 1:400 overnight at 4°C, followed by operating according to SP Kit(Rabbit) (sp-0023) instructions and DAB staining.



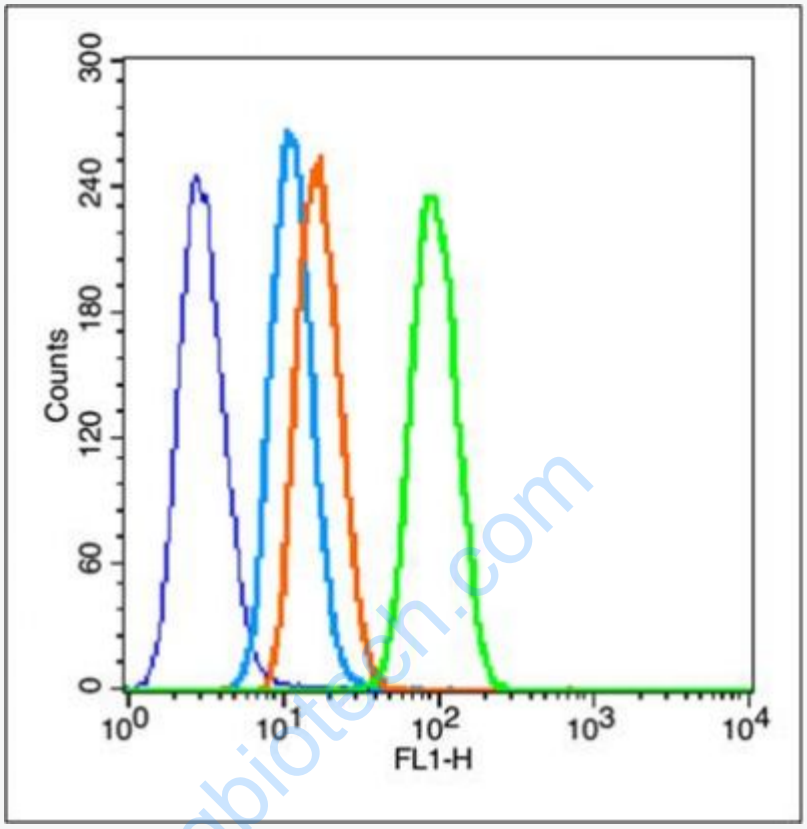
Tissue/cell: rat carotid artery; 4% Paraformaldehyde-fixed and paraffin-embedded; Antigen retrieval: citrate buffer (0.01M, pH 6.0), Boiling bathing for 15min; Block endogenous peroxidase by 3% Hydrogen peroxide for 30min; Blocking buffer (normal goat serum,C-0005) at 37℃ for 20 min;

Incubation: Anti-MMP-2 Polyclonal Antibody, Unconjugated(SL0412R) 1:200, overnight at 4°C, followed by conjugation to the secondary antibody(SP-0023) and DAB(C-0010) staining



Tissue/cell: rat brain tissue; 4% Paraformaldehyde-fixed and paraffin-embedded; Antigen retrieval: citrate buffer (0.01M, pH 6.0), Boiling bathing for 15min; Block endogenous peroxidase by 3% Hydrogen peroxide for 30min; Blocking buffer (normal goat serum,C-0005) at 37℃ for 20 min;

Incubation: Anti-MMP-2 Polyclonal Antibody, Unconjugated(SL0412R) 1:200, overnight at 4°C, followed by conjugation to the secondary antibody(SP-0023) and DAB(C-0010) staining



Blank control (blue line): Hela (blue).

Primary Antibody (green line): Rabbit Anti-MMP2 antibody (SL0412R)

Dilution: 1µg /10^6 cells;

Isotype Control Antibody (orange line): Rabbit IgG .

Secondary Antibody (white blue line): Goat anti-rabbit IgG-FITC

Dilution: 1µg /test.

Protocol

The cells were fixed with 80% methanol (5 min at -20°C) and then permeabilized with 0.1% PBS-Tween for 20 min at room temperature. Cells stained with Primary Antibody for 30 min at room temperature. The cells were then incubated in 1 X PBS/2%BSA/10% goat serum to block non-specific protein-protein interactions

	followed by the antibody for 15 min at room temperature. The secondary antibody used for 40 min at room temperature. Acquisition of 20,000 events was performed.