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[Marker Primary Antibody]

Rabbit Anti-MMP-2/HRP Conjugated antibody

Catalog Number: SL4599R-HRP

FOR RESEARCH USE ONLY

[DATASHEET]

Host:	Rabbit
Isotype:	IgG
Clonality:	Polyclonal
Target:	Anti-MMP-2/HRP
Immunogen:	KLH conjugated synthetic peptide derived from human MMP-2
Purification:	affinity purified by Protein A
Concentration:	1mg/ml
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 1M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.
Applications:	WB=1:500-2000 IHC-P=1:100-500 IHC-F=1:100-500 not yet tested in other applications. optimal dilutions/concentrations should be determined by the end user.
Reactivity:	Human(predicted:Mouse,Rat,Pig,Cow,Horse,Rabbit,Sheep)
Background:	background: This gene is a member of the matrix metalloproteinase (MMP) gene family, that are zinc-dependent enzymes capable of cleaving components of the extracellular matrix and molecules involved in signal transduction. The protein encoded by this gene 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, intracellulary 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, and metastasis. Mutations in this gene have been associated with Winchester syndrome and Nodulosis-Arthropathy-Osteolysis (NAO)

Important Note: This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.

	syndrome. Alternative splicing results in multiple transcript variants encoding different isoforms. [provided by RefSeq, Oct 2014] **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. Involved in the formation of the fibrovascular tissues in association with MMP14. 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: Multicentric osteolysis, nodulosis, and arthropathy (MONA)

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	[MIM:259600]: An autosomal recessive syndrome characterized by severe multicentric osteolysis with predominant involvement of the hands and feet. Additional features include coarse face, corneal opacities, patches of thickened, hyperpigmented skin, hypertrichosis and gum hypertrophy. {ECO:0000269|PubMed:11431697, disease is caused by mutations affecting the gene represented in this entry. **Similarity:** Belongs to the peptidase M10A family. {ECO:0000305}. Contains 3 fibronectin type-II domains. Contains 4 hemopexin repeats. **Database links:** **Entrez Gene:** 4313 Human **Entrez Gene:** 17390 Mouse **Entrez Gene:** 81686 Rat Omim: 120360 Human **SwissProt:** P08253 Human **SwissProt:** P33434 Mouse **SwissProt:** P33436 Rat **Unigene:** 513617 Human **Unigene:** 29564 Mouse **Unigene:** 6422 Rat Important **Note:** This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications. Matrix metalloproteinases (MMPs): MMP2 is a family of zinc-dependent proteases that degrade various Extracellular matrix components, also known as type IV collagenase or gelatinase A. Its main function is to degrade type IV collagen, and thus it plays an important role in Tumour cells breaking through the basement membrane barrier and in invasion and metastasis. It is currently used mainly in the detection of basement membrane and research on invasion and metastasis in various malignant Tumours (such as breast cancer, gastrointestinal cancer, ovarian cancer, bladder cancer, etc.).

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