

Human MMP-9 ELISA Kit | MMP-9 elisa kit

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CATALOG #
AAA281396

REACTIVITY
Human

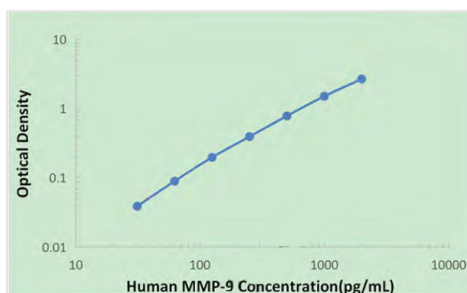
PRODUCT SYNONYMS

MMP-9; Human MMP-9 ELISA Kit; MMP-9 elisa kit

PRODUCT SPECIFICATIONS

Reactivity	Human
Specificity	This assay recognizes both recombinant and natural human MMP-9. The factors listed below were prepared at 50ng/ml and assayed for cross-reactivity. No significant cross-reactivity was observed.
Sequence Length	707
Samples	Cell culture supernates, serum and plasma
Assay Type	Quantitative Sandwich
Sensitivity	< 15.2 pg/mL
Intra-assay Precision	Three samples of known concentration were tested 20 times on one plate to evaluate the Intra-plate precision.
Inter-assay Precision	Three samples of known concentration were tested 20 times separate assays to evaluate the Inter-plate precision. Assay were using two lots of components.
Preparation and Storage	Store at 4 degree C.

IMAGES



Standard Curve (Sample)

ADDITIONAL INFORMATION

Related Product Information for MMP-9 elisa kit	Principle of the Assay: This assay employs the quantitative sandwich enzyme immunoassay technique. A monoclonal antibody specific for MMP-9 has been pre-coated onto a microplate. Standards and samples are pipetted into the wells and any MMP-9 present is bound by the immobilized antibody. Following incubation unbound samples are removed during a wash step, and then a detection antibody specific for MMP-9 is added to the wells and binds to the combination of capture antibody-MMP-9 in sample. Following a wash to remove any unbound combination, and enzyme conjugate is added to the wells. Following incubation and wash steps, a substrate is added. A colored product TMB is formed in proportion to the amount of MMP-9 present in the sample. The reaction is terminated by addition of acid and absorbance is measured. A standard curve is prepared from seven MMP-9 standard dilutions and MMP-9 sample concentration determined. Background/Introduction: Matrix metalloproteinases (MMPs), also called matrixins, constitute a family of zinc and calcium dependent endopeptidases that function in the breakdown of the extracellular matrix (ECM) and in the processing of a variety of molecules in different subcellular environments. They play an important role in many normal physiological processes such as embryonic development, morphogenesis, reproduction, and tissue remodeling (1, 2). They also participate in inflammatory and autoimmune disorders such as arthritis, cancer, and cardiovascular disease (3-5). While the amounts of newly synthesized MMPs are regulated mainly at the levels of transcription, the proteolytic activities of existing MMPs are controlled through both the activation of proenzymes or zymogens and the inhibition of active enzymes by endogenous inhibitors, alpha2-Macroglobulin, and tissue inhibitors of metalloproteinases (TIMPs) (6). MMP-9 (also referred to as gelatinase B, 92 kDa type IV collagenase, 92 kDa gelatinase, and type V collagenase) is secreted as a glycosylated proenzyme (6-8). Activation of the proenzyme involves proteolytic removal of the N-terminal pro region, resulting in the 82 kDa active enzyme (9, 10). Active human MMP-9 shares 72% and 74% amino acid sequence identity with mouse and rat MMP-9, respectively. In addition to the zinc-binding site, the catalytic domain also contains three contiguous fibronectin type II homology units responsible for binding gelatin (11). A proline-rich hinge region links the catalytic domain to the C-terminal hemopexin-like domain. In vitro treatment of the proenzyme with 4-aminophenylmercuric acetate (APMA) produces not only the active enzyme but also a C-terminal truncated form with activity comparable to that of the active form (12). MMP-9 degrades components of the ECM with high specific activity for denatured collagens (gelatin). It can cleave native collagens of type III, IV, V, and XI, as well as Elastin, Nidogen-1, and Vitronectin (2, 3). MMP-9 can also cleave a variety of chemokines and growth factors (e.g. IL-1beta, CXCL8/IL-8, CXCL7, CXCL4, CXCL1, Latent TGF-beta, membrane bound TNF-alpha, VEGF, and FGF basic), Amyloid beta peptide, Substance P, and Myelin Basic Protein (3, 13-15). This action can increase or decrease the biological activity of soluble factors and can also liberate them from association with the ECM (16, 17). MMP-9 can also trigger signaling through various transmembrane proteins or inhibit signaling by inducing their shedding from the cell surface (e.g. CD44, E-Cadherin, Integrins, ICAM-1, and IL-2 Ralpha) (3, 18-20). MMP-9 is produced by a variety of normal and transformed cells including neutrophils, monocytes, macrophages, astrocytes, fibroblasts, osteoclasts, chondrocytes, keratinocytes, endothelial and epithelial cells. It exerts physiological and pathological angiogenic and remodeling effects on the vasculature (21-25). Activated neutrophils release proMMP-9 which is free of TIMP-1, allowing the liberation of pro-angiogenic FGF-2 from the ECM (17). MMP-9 in complex with TIMP-1 does not induce FGF-2 release (17). Neutrophil-derived MMP-9 exacerbates the inflammatory response, in part by generating collagen-derived peptides that induce the release of additional neutrophil MMP- 9 (26). MMP-9 also plays a role in bone formation and remodeling (1, 21, 27), methamphetamine- induced behavioral sensitization and reward (28), the regulation of neuronal synapse remodeling (29), trophoblast invasion during implantation (30), and the inactivation of Serpin alpha1-Proteinase Inhibitor (31). The shedding of adhesion proteins by MMP-9 has a direct effect on tumor cell invasiveness (18-20).Circulating levels of MMP-9 are increased in many inflammatory disorders including intraluminal thrombus formation (32), atherosclerosis (33), Crohn's disease (34), hepatitis C virus infection (35), colorectal cancer (36), and Duchenne muscular dystrophy (37). The ratio of MMP-9 to TIMP-1 is also increased in multiple sclerosis serum (38) and cystic fibrosis sputum (39), but it is decreased in the serum during cytomegalovirus infection (40). Levels of free MMP-9 and complexes of MMP-9 with Lipocalin-2/NGAL are elevated in the urine of ovarian cancer and uterine tract infection patients, respectively (41, 42).
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NCBI AND UNIPROT INFORMATION

NCBI GI #	74272287
NCBI GeneID	4318
NCBI Accession #	NP_004985.2
NCBI GenBank Nucleotide #	NM_004994.3
UniProt Accession #	P14780; Q3LR70; Q8N725; Q9H4Z1; Q9UCJ9; Q9UCL1; Q9UDK2; B2R7V9

Molecular Weight	78,458 Da
NCBI Official Full Name	matrix metalloproteinase-9 preproprotein
NCBI Official Synonym Full Names	matrix metalloproteinase 9
NCBI Official Symbol	MMP9
NCBI Official Synonym Symbols	GELB; CLG4B; MMP-9; MANDP2
NCBI Protein Information	matrix metalloproteinase-9
UniProt Protein Name	Matrix metalloproteinase-9
UniProt Gene Name	MMP9
UniProt Synonym Gene Names	CLG4B; GELB

For Research Use Only. Not for use in diagnostic or therapeutic procedures. Small volumes of product may become entrapped in the seal of the vial during shipment and storage; if necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the cap.

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Online datasheet: <https://stage.aaabiotech.com/human-elisa-kits/mmp-9/281396>