Datasheet for ABIN411329

MMP2 ELISA Kit

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Overview

Quantity:	96 tests
Target:	MMP2
Binding Specificity:	AA 30-662
Reactivity:	Mouse
Method Type:	Sandwich ELISA
Detection Range:	625-40000 pg/mL
Minimum Detection Limit:	625 pg/mL
Application:	ELISA

Product Details

Purpose:	Sandwich High Sensitivity ELISA kit for Quantitative Detection of Mouse MMP-2
Brand:	PicoKine™
Sample Type:	Cell Culture Supernatant, Serum, Plasma (heparin)
Analytical Method:	Quantitative
Detection Method:	Colorimetric
Immunogen:	Expression system for standard: NSO Immunogen sequence: A30-C662
Specificity:	Expression system for standard: NSO Immunogen sequence: A30-C662
Cross-Reactivity (Details):	There is no detectable cross-reactivity with other relevant proteins.

Product Details

Sensitivity:	<10pg/mL
Material not included:	Microplate reader in standard size. Automated plate washer. Adjustable pipettes and pipette tips. Multichannel pipettes are recommended in the condition of large amount of samples in the detection. Clean tubes and Eppendorf tubes. Washing buffer (neutral PBS or TBS). Preparation of 0.01M TBS: Add 1.2g Tris, 8.5g Nacl

Target Details

Target:	MMP2
Alternative Name:	MMP2 (MMP2 Products)
Background:	Protein 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 (By similarity). . Background: Type IV collagenase, 72-kD, is officially designated matrix metalloproteinase-2(MMP2). It is also known as gelatinase, 72-kD. MMP-2 plays an essential role in angiogenesis and arteriogenesis, two processes critical to restoration of tissue perfusion after ischemia. MMP-2 expression is increased in tissue ischemia, but the responsible mechanisms remain unknown. Matrix metalloproteinases(MMPs) catalyze extracellular matrix degradation. Control of their activity is a promising target for therapy of diseases characterized by abnormal connective tissue turnover. MMPs are expressed as latent proenzymes that are activated by proteolytic cleavage that triggers a conformational change in the propeptide(cysteine switch). The structure of proMMP-2 reveals how the propeptide shields the catalytic cleft and that the cysteine switch may operate through cleavage of loops essential for propeptide stability. The gene is localized to 16q21 using somatic cell hybrids and in situ hybridization. The standard product used in this kit is recombinant mouse MMP-2, consisting of 662 amino acids with the molecular mass of 72KDa. The detected MMP-2 includes zymogen and active enzyme. Synonyms: 72 kDa type IV collagenase,3.4.24.24,72 kDa gelatinase,Gelatinase A,Matrix metalloproteinase-2,MMP-2,PEX,Mmp2, Full Gene Name: 72 kDa type IV collagenase Cellular Localisation: Isoform 1: Secreted, extracellular space, extracellular matrix . Membrane .

Target Details

	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 (By similarity)..
Gene ID:	17390
UniProt:	P33434
Pathways:	Activation of Innate immune Response

Application Details

Application Notes:	Before using Kit, spin tubes and bring down all components to bottom of tube. Duplicate well assay was recommended for both standard and sample testing.
Comment:	Sequence similarities: Belongs to the peptidase M10A family.
Plate:	Pre-coated
Protocol:	mouse MMP-2 ELISA Kit was based on standard sandwich enzyme-linked immune-sorbent assay technology. A monoclonal antibody from rat specific for MMP-2 has been precoated onto 96-well plates. Standards(NSO, A30-C662) and test samples are added to the wells, a biotinylated detection polyclonal antibody from goat specific for MMP-2 is added subsequently and then followed by washing with PBS or TBS buffer. Avidin-Biotin-Peroxidase Complex was added and unbound conjugates were washed away with PBS or TBS buffer. HRP substrate TMB was used to visualize HRP enzymatic reaction. TMB was catalyzed by HRP to produce a blue color product that changed into yellow after adding acidic stop solution. The density of yellow is proportional to the mouse MMP-2 amount of sample captured in plate.
Assay Procedure:	Aliquot 0.1 mL per well of the 40000pg/mL, 20,000pg/mL,10,000pg/mL, 5000pg/mL, 2500pg/mL, 1250pg/mL, 625pg/mL mouse MMP-2 standard solutions into the precoated 96-well plate. Add 0.1 mL of the sample diluent buffer into the control well (Zero well). Add 0.1 mL of each properly diluted sample of mouse cell culture supernates, serum or plasma (heparin) to each empty well. See "Sample Dilution Guideline" above for details. It is recommended that each mouse MMP-2 standard solution and each sample be measured in duplicate.
Assay Precision:	• Sample 1: n=16, Mean(pg/ml): 1428, Standard deviation: 75.7, CV(%): 5.3 • Sample 2: n=16, Mean(pg/ml): 3727, Standard deviation: 178.9, CV(%): 4.8 • Sample 3: n=16, Mean(pg/ml): 6658, Standard deviation: 412.8, CV(%): 6.2, • Sample 1: n=24, Mean(pg/ml): 1634, Standard deviation: 104.6, CV(%): 6.4 • Sample 2: n=24, Mean(pg/ml): 3967, Standard deviation: 218.2, CV(%): 5.5 • Sample 3: n=24, Mean(pg/ml): 6832, Standard deviation: 499, CV(%): 7.3

Application Details

Restrictions:	For Research Use only

Handling

Handling Advice:	Avoid multiple freeze-thaw cycles.
Storage:	-20 °C,4 °C
Storage Comment:	Store at 4°C for 6 months, at -20°C for 12 months. Avoid multiple freeze-thaw cycles
Expiry Date:	12 months

Publications

Product cited in:

Xie, Huo, Li, Dai, Xu, Yin: "Olfactory Ensheathing Cells Inhibit Gliosis in Retinal Degeneration by Downregulation of the Müller Cell Notch Signaling Pathway." in: **Cell transplantation**, Vol. 26, Issue 6, pp. 967-982, (2018) (PubMed).

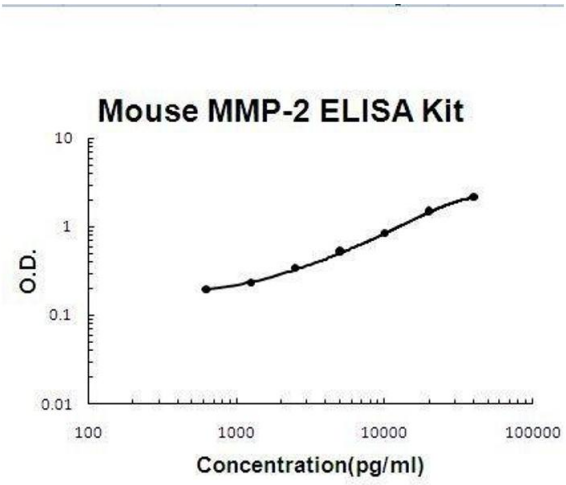
Chen, Zeng, Zhan, Wang, Jiang, Li: "Aberrant low expression of p85α in stromal fibroblasts promotes breast cancer cell metastasis through exosome-mediated paracrine Wnt10b." in: **Oncogene**, Vol. 36, Issue 33, pp. 4692-4705, (2017) (PubMed).

Bai, Yin, Feng, Cao, Wu, Zhu, Li, Tu, Chai: "Corydalis hendersonii Hemsl. protects against myocardial injury by attenuating inflammation and fibrosis via NF-κB and JAK2-STAT3 signaling pathways." in: **Journal of ethnopharmacology**, Vol. 207, pp. 174-183, (2017) (PubMed).

Dai, Ji, Jiang, Sun: "Marsdenia tenacissima extract suppresses tumor growth and angiogenesis in A20 mouse lymphoma." in: **Oncology letters**, Vol. 13, Issue 5, pp. 2897-2902, (2017) (PubMed).

Frati, Ricci, Pierucci, Nistri, Bani, Meacci: "Role of sphingosine kinase/S1P axis in ECM remodeling of cardiac cells elicited by relaxin." in: **Molecular endocrinology (Baltimore, Md.)**, Vol. 29, Issue 1, pp. 53-67, (2016) (PubMed).

There are more publications referencing this product on: Product page



ELISA

Image 1. Mouse MMP-2 PicoKine ELISA Kit standard curve

