Datasheet for ABIN921071

MMP13 ELISA Kit

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Overview

Quantity:	96 tests
Target:	MMP13
Binding Specificity:	AA 20-471
Reactivity:	Human
Method Type:	Sandwich ELISA
Detection Range:	156-10000 pg/mL
Minimum Detection Limit:	156 pg/mL
Application:	ELISA

Product Details

Purpose:	Sandwich High Sensitivity ELISA kit for Quantitative Detection of Human MMP13
Brand:	PicoKine™
Sample Type:	Cell Culture Supernatant, Serum, Plasma (heparin)
Analytical Method:	Quantitative
Detection Method:	Colorimetric
Immunogen:	Expression system for standard: NSO Immunogen sequence: L20-C471
Specificity:	Expression system for standard: NSO Immunogen sequence: L20-C471
Cross-Reactivity (Details):	There is no detectable cross-reactivity with other relevant proteins.

Product Details

Sensitivity:	<5pg/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:	MMP13
Alternative Name:	MMP13 (MMP13 Products)
Background:	Protein Function: Plays a role in the degradation of extracellular matrix proteins including fibrillar collagen, fibronectin, TNC and ACAN. Cleaves triple helical collagens, including type I, type II and type III collagen, but has the highest activity with soluble type II collagen. Can also degrade collagen type IV, type XIV and type X. May also function by activating or degrading key regulatory proteins, such as TGFB1 and CTGF. Plays a role in wound healing, tissue remodeling, cartilage degradation, bone development, bone mineralization and ossification. Required for normal embryonic bone development and ossification. Plays a role in the healing of bone fractures via endochondral ossification. Plays a role in wound healing, probably by a mechanism that involves proteolytic activation of TGFB1 and degradation of CTGF. Plays a role in keratinocyte migration during wound healing. May play a role in cell migration and in tumor cell invasion. . Background: Collagenase 3 is an enzyme that in humans is encoded by the MMP13 gene. Most MMP's are secreted as inactive proproteins which are activated when cleaved by extracellular proteinases. The protein encoded by this gene cleaves type II collagen more efficiently than types I and III. The expression of MMP13 in osteoarthritic cartilage and its activity against type II collagen indicates that the enzyme plays a significant role in cartilage collagen degradation and must, therefore, form part of a complex target for proposed therapeutic interventions based on collagenase inhibition. It may be involved in articular cartilage turnover and cartilage pathophysiology associated with osteoarthritis. The gene is part of a cluster of MMP genes which localize to chromosome 11q22.3. Synonyms: Collagenase 3,3.4.24.-,Matrix metalloproteinase-13,MMP-13,MMP13, Full Gene Name: Collagenase 3 Cellular Localisation: Secreted, extracellular space, extracellular matrix . Secreted.
Gene ID:	4322
UniProt:	A8K846

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. Tissue Specificity: Detected in fetal cartilage and calvaria, in chondrocytes of hypertrophic cartilage in vertebrae and in the dorsal end of ribs undergoing ossification, as well as in osteoblasts and periosteal cells below the inner periosteal region of ossified ribs. Detected in chondrocytes from in joint cartilage that have been treated with TNF and IL1B, but not in untreated chondrocytes. Detected in T lymphocytes. Detected in breast carcinoma tissue. .
Plate:	Pre-coated
Protocol:	human MMP13 ELISA Kit was based on standard sandwich enzyme-linked immune-sorbent assay technology. A monoclonal antibody from mouse specific for MMP13 has been precoated onto 96-well plates. Standards(NSO, L20-C471) and test samples are added to the wells, a biotinylated detection polyclonal antibody from goat specific for MMP13 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 human MMP13 amount of sample captured in plate.
Assay Procedure:	Aliquot 0.1 mL per well of 10000pg/mL, 5000pg/mL, 2500pg/mL, 1250pg/mL, 625pg/mL, 312pg/mL, 156pg/mL human MMP13 standard solutions into the pre-coated 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 human cell culture supernates, serum or plasma(heparin) to each empty well. See "Sample Dilution Guideline" above for details. It is recommended that each human MMP13 standard solution and each sample be measured in duplicate.
Assay Precision:	• Sample 1: n=16, Mean(pg/ml): 471, Standard deviation: 19.8, CV(%): 4.2 • Sample 2: n=16, Mean(pg/ml): 1623, Standard deviation: 86.02, CV(%): 5.3 • Sample 3: n=16, Mean(pg/ml): 3245, Standard deviation: 194.7, CV(%): 6, • Sample 1: n=24, Mean(pg/ml): 538, Standard deviation: 29.1, CV(%): 5.4 • Sample 2: n=24, Mean(pg/ml): 1776, Standard deviation: 104.8, CV(%): 5.9 • Sample 3: n=24, Mean(pg/ml): 3685, Standard deviation: 265.32, CV(%): 7.2
Restrictions:	For Research Use only

Handling

Handling Advice:	Avoid multiple freeze-thaw cycles.

Handling

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:

Khan, Haseeb, Ansari, Haqqi: "A wogonin-rich-fraction of Scutellaria baicalensis root extract exerts chondroprotective effects by suppressing IL-1β-induced activation of AP-1 in human OA chondrocytes." in: **Scientific reports**, Vol. 7, pp. 43789, (2018) (PubMed).

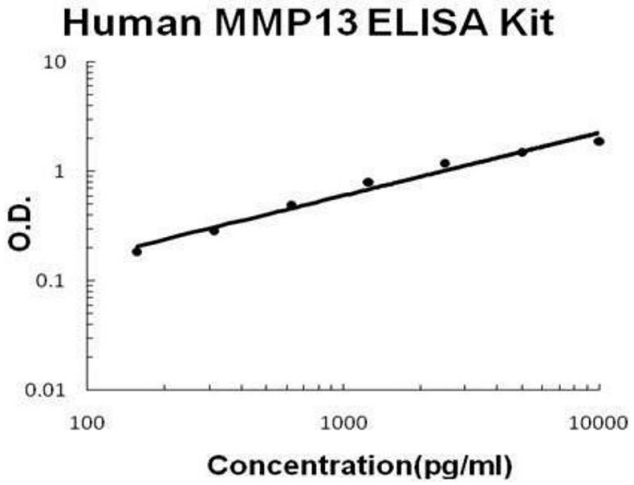
Nosratzehi, Alijani, Moodi: "Salivary MMP-1, MMP-2, MMP-3 and MMP-13 Levels in Patients with Oral Lichen Planus and Squamous Cell Carcinoma" in: **Asian Pacific journal of cancer prevention : APJCP**, Vol. 18, Issue 7, pp. 1947-1951, (2017) (PubMed).

Capsoni, Ongari, Lonati, Accetta, Gatti, Catania: "?-Melanocyte-stimulating-hormone (?-MSH) modulates human chondrocyte activation induced by proinflammatory cytokines." in: **BMC musculoskeletal disorders**, Vol. 16, pp. 154, (2015) (PubMed).

Agha-Hosseini, Mirzaii-Dizgah: "Serum and saliva collagenase-3 (MMP-13) in patients with oral lichen planus and oral squamous cell carcinoma." in: **Medical journal of the Islamic Republic of Iran**, Vol. 29, pp. 218, (2015) (PubMed).

Nikniaz, Ostadrahimi, Mahdavi, Ebrahimi, Nikniaz: "Effects of Elaeagnus angustifolia L. supplementation on serum levels of inflammatory cytokines and matrix metalloproteinases in females with knee osteoarthritis." in: **Complementary therapies in medicine**, Vol. 22, Issue 5, pp. 864-9, (2014) (PubMed).

There are more publications referencing this product on: Product page



ELISA

Image 1. Human MMP13 PicoKine ELISA Kit standard curve