

Human MMP13 ELISA Kit ab221839

Recombinant

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Overview

Product name Human MMP13 ELISA Kit

Detection method Colorimetric

Precision Intra-assay

Sample	n	Mean	SD	CV%
Supernatant	8			5.9%

Inter-assay

Sample	n	Mean	SD	CV%
Supernatant	3			5%

Sample type Saliva, Urine, Serum, Cell culture media

Assay type Sandwich (quantitative)

Sensitivity 5.7 pg/ml

Range 39 pg/ml - 2500 pg/ml

Recovery Sample specific recovery

Sample type	Average %	Range
Saliva	80	78% - 82%
Urine	84	74% - 93%
Serum	83	78% - 88%
Cell culture media	102	101% - 103%

Assay time 2h 30m

Assay duration Multiple steps standard assay

Species reactivity **Reacts with:** Cow, Human, Pig

Product overview

Human MMP13 ELISA Kit (ab221839) is a single-wash 90 min sandwich ELISA designed for the quantitative measurement of MMP13 protein in saliva, serum, urine, and cell culture media. It uses our proprietary SimpleStep ELISA® technology. Quantitate Human MMP13 with 5.7 pg/ml sensitivity.

SimpleStep ELISA® technology employs capture antibodies conjugated to an affinity tag that is recognized by the monoclonal antibody used to coat our SimpleStep ELISA® plates. This approach to sandwich ELISA allows the formation of the antibody-analyte sandwich complex in a single step, significantly reducing assay time. See the SimpleStep ELISA® protocol summary in the image section for further details. Our SimpleStep ELISA® technology provides several benefits:

- Single-wash protocol
- High sensitivity, specificity and reproducibility from superior antibodies
- Fully validated in biological samples
- 96-wells plate breakable into 12 x 8 wells strips

A 384-well SimpleStep ELISA® microplate ([ab203359](#)) is available to use as an alternative to the 96-well microplate provided with SimpleStep ELISA® kits.

Notes

Human MMP-13, matrix metalloproteinase 13, also known as Collagenase 3 is a secreted protein encoded by the gene MMP13. MMP-13 belongs to the matrix metalloproteinase family, which are calcium dependent endopeptidases. MMP-13 degrades type I, II, and III collagen. The MMP protein-13 is expressed as an inactive pro-form composed of an 83-amino acid pro-peptide, an amino acid catalytic domain, and hemopexin-like domain. Dissociation of a zinc ion from the cysteine-switch motif releases the activation-peptide, thus activating the enzyme. MMP-13 is involved in various processes, such as, embryonic development, ossification, wound healing, and tissue remodeling.

Platform

Microplate (12 x 8 well strips)

Properties

Storage instructions

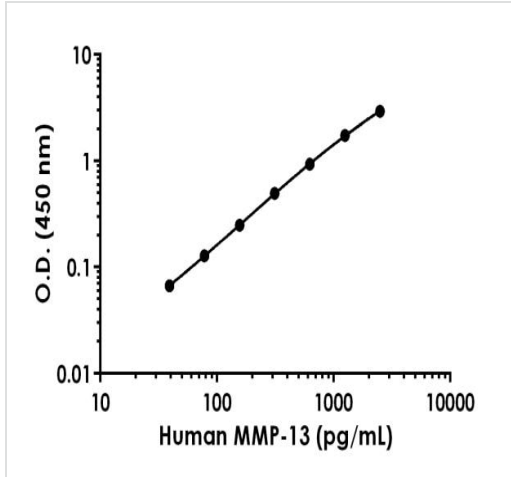
Store at +4°C. Please refer to protocols.

Components	1 x 96 tests
10X Human MMP-13 Capture Antibody	1 x 600µl
10X Human MMP-13 Detector Antibody	1 x 600µl
10X Wash Buffer PT (ab206977)	1 x 20ml
Antibody Diluent 4BI	1 x 6ml
Human MMP-13 Lyophilized Recombinant Protein	1 x 2 vials
Plate Seals	1 unit
Sample Diluent NS (ab193972)	2 x 50ml

Components	1 x 96 tests
SimpleStep Pre-Coated 96-Well Microplate (ab206978)	1 unit
Stop Solution	1 x 12ml
Streptavidin-HRP	1 x 100µl
TMB Development Solution	1 x 12ml

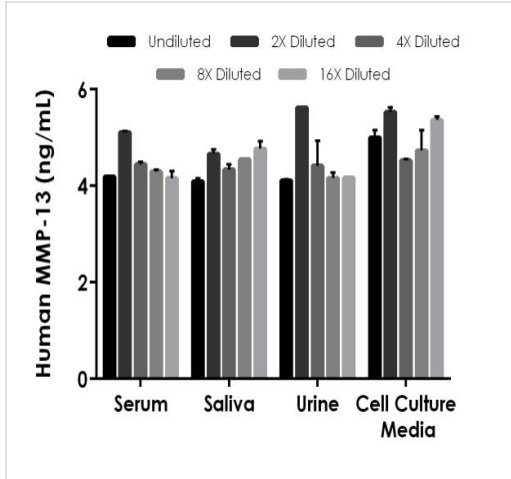
Function	Degrades collagen type I. Does not act on gelatin or casein. Could have a role in tumoral process.
Tissue specificity	Seems to be specific to breast carcinomas.
Involvement in disease	<p>Defects in MMP13 are the cause of spondyloepimetaphyseal dysplasia Missouri type (SEMD-MO) [MIM:602111]. A bone disease characterized by moderate to severe metaphyseal changes, mild epiphyseal involvement, rhizomelic shortening of the lower limbs with bowing of the femora and/or tibiae, coxa vara, genu varum and pear-shaped vertebrae in childhood. Epimetaphyseal changes improve with age.</p> <p>Defects in MMP13 are the cause of metaphyseal anadysplasia type 1 (MANDP1) [MIM:602111]. Metaphyseal anadysplasia consists of an abnormal bone development characterized by severe skeletal changes that, in contrast with the progressive course of most other skeletal dysplasias, resolve spontaneously with age. Clinical characteristics are evident from the first months of life and include slight shortness of stature and a mild varus deformity of the legs. Patients attain a normal stature in adolescence and show improvement or complete resolution of varus deformity of the legs and rhizomelic micromelia.</p>
Sequence similarities	<p>Belongs to the peptidase M10A family.</p> <p>Contains 4 hemopexin-like domains.</p>
Domain	The conserved cysteine present in the cysteine-switch motif binds the catalytic zinc ion, thus inhibiting the enzyme. The dissociation of the cysteine from the zinc ion upon the activation-peptide release activates the enzyme.
Cellular localization	Secreted > extracellular space > extracellular matrix.

Images



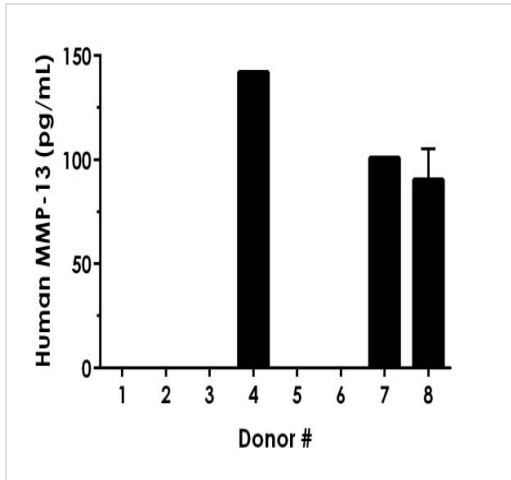
Background-subtracted data values (mean +/- SD) are graphed.

Example of human MMP-13 standard curve in Sample Diluent NS



The concentrations of MMP-13 were measured in duplicates, interpolated from the MMP-13 standard curves and corrected for sample dilution. Undiluted samples are as follows: serum 50%, saliva 50%, urine 50%, and RPMI media 50%. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2).

Interpolated concentrations of spiked MMP-13 in human serum, saliva, urine, and cell culture media samples



Interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean MMP-13 concentration was determined to be 32 pg/mL with a range of N.D. – 142 pg/mL.

Serum from ten individual healthy human donors was measured in duplicate

Powered by
recombinant antibodies



Research with confidence
Consistent and reproducible results



Long-term and scalable supply
Recombinant technology



Success from the first experiment
Confirmed specificity



Ethical standards compliant
Animal-free production

Sandwich ELISA - Human MMP13 ELISA Kit
(ab221839)

To learn more about the advantages of recombinant antibodies see [here](#).

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