abcam

Product datasheet

Human MCP-1 ELISA Kit ab179886

Recombinant SimpleStep ELISA

27 References 10 Images

Overview

Product name Human MCP-1 ELISA Kit

Detection method Colorimetric

Precision

Intra-assay

Sample	n	Mean	SD	CV%
Overall	5			2.5%

Inter-assay

Sample	n	Mean	SD	CV%
Overall	3			6.7%

Sample type Cell culture supernatant, Urine, Serum, Plasma, Hep Plasma, EDTA Plasma, Cit plasma, Cerebral Spinal Fluid

Assay type Sandwich (quantitative)

Sensitivity 1.26 pg/ml

Range 4.7 pg/ml - 300 pg/ml

Recovery

Sample specific recovery

Sample type	Average %	Range
Cell culture supernatant	98	97% - 99%
Urine	92	90% - 94%
Serum	97	94% - 101%
Hep Plasma	91	91% - %
EDTA Plasma	94	90% - 97%
Cit plasma	92	91% - 95%

Sample type	Average %	Range
Cerebral Spinal Fluid	105	102% - 110%

Assay time 1h 30m

Assay duration One step assay

Species reactivity **Reacts with:** Human
Does not react with: Cow

Product overview Human MCP1 (CCL2) ELISA kit (ab179886) is a single-wash 90 min sandwich ELISA designed for the quantitative measurement of MCP1 protein in human serum, plasma, urine, and cell culture supernatant samples. It uses our proprietary SimpleStep ELISA® technology. Quantitate human MCP1 with 1.26 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 reduces assay time to 90 minutes or less
-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 SimpeStep ELISA® kits.

ASSAY SPECIFICITY This kit recognizes both native and recombinant human MCP1 protein in serum, plasma, urine, and cell culture supernatant samples only. Cell and tissue extract samples have not been tested with this kit.

SPECIES REACTIVITY This kit recognizes human MCP1 protein.
Other species reactivity was determined by measuring MCP1 (100%) serum samples of various species, interpolating the protein concentrations from the human standard curve, and expressing the interpolated concentrations as a percentage of the protein concentration in human serum assayed at the same dilution.
Reactivity < 3% was determined for the following species: Mouse and cow.

CROSS REACTIVITY Recombinant mouse MCP1 and rat MCP1 were prepared at 100 pg/mL and 50 pg/mL and assayed for cross reactivity. Cross-reactivity was only observed at 50 ng/mL.

CALIBRATION

This immunoassay is calibrated against a highly purified human MCP1. The NIBSC/WHO unclassified purified human MCP1 preparation 92/794 was evaluated in this kit.

The dose response curve of the unclassified standard MCP1 parallels the SimpleStep standard

curve. To convert sample values obtained with the SimpleStep human MCP1 kit to approximate NIBSC 92/794 units, use the equation below.

NIBSC (92/794) approximate value (U/mL) = 0.000266 x SimpleStep human MCP1 value (pg/mL).

Notes MCP-1 (CCL2) is a chemotactic factor that attracts monocytes and basophils but not neutrophils or eosinophils. Augments monocyte anti-tumor activity. Has been implicated in the pathogenesis of diseases characterized by monocytic infiltrates, like psoriasis, rheumatoid arthritis or atherosclerosis. May be involved in the recruitment of monocytes into the arterial wall during the disease process of atherosclerosis.

Platform Pre-coated microplate (12 x 8 well strips)

Properties

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

Components	1 x 384 tests	1 x 96 tests	1 x 96 tests
10X Human MCP-1 Capture Antibody	1 x 600µl	1 x 600µl	1 x 600µl
10X Human MCP-1 Detector Antibody	1 x 600µl	1 x 600µl	1 x 600µl
10X Wash Buffer PT (ab206977)	1 x 20ml	1 x 20ml	1 x 20ml
384 well CaptSure™ microplates	1 unit	0 x 0 unit	0 x 0 unit
Antibody Diluent CPI2	1 x 6ml	1 x 6ml	0 x 0ml
Human MCP-1 Lyophilized Recombinant Protein (ab9670)	2 vials	2 vials	2 vials
Plate Seals	1 unit	1 unit	1 unit
Sample Diluent NS (ab193972)	2 x 50ml	1 x 50ml	1 x 50ml
SimpleStep Pre-Coated 96-Well Microplate (ab206978)	0 x 0 unit	1 unit	1 unit
Stop Solution	2 x 12ml	1 x 12ml	1 x 12ml
TMB Development Solution	2 x 12ml	1 x 12ml	1 x 12ml

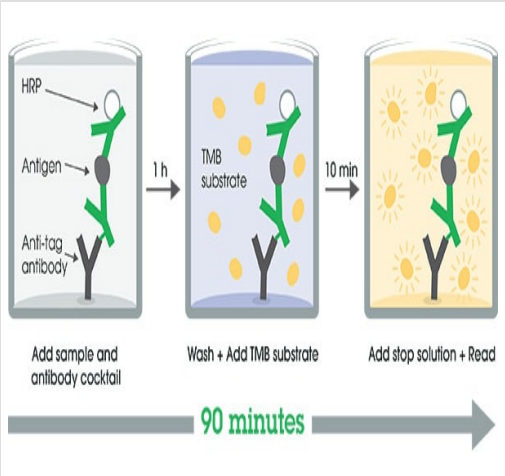
Function Chemotactic factor that attracts monocytes and basophils but not neutrophils or eosinophils. Augments monocyte anti-tumor activity. Has been implicated in the pathogenesis of diseases characterized by monocytic infiltrates, like psoriasis, rheumatoid arthritis or atherosclerosis. May be involved in the recruitment of monocytes into the arterial wall during the disease process of atherosclerosis.

Sequence similarities Belongs to the intercrine beta (chemokine CC) family.

Post-translational modifications Processing at the N-terminus can regulate receptor and target cell selectivity. Deletion of the N-terminal residue converts it from an activator of basophil to an eosinophil chemoattractant.

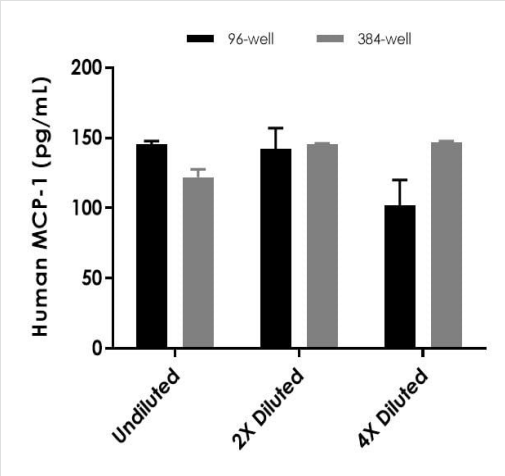
Cellular localization Secreted.

Images



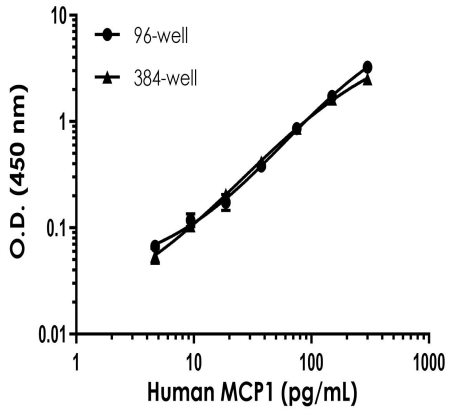
Other - Human MCP-1 ELISA Kit (ab179886)

SimpleStep ELISA technology allows the formation of the antibody-antigen complex in one single step, reducing assay time to 90 minutes. Add samples or standards and antibody mix to wells all at once, incubate, wash, and add your final substrate. See protocol for a detailed step-by-step guide.



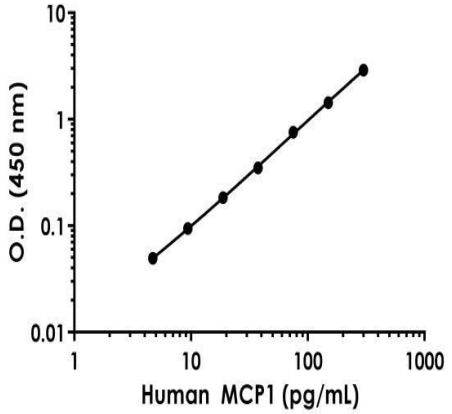
Interpolated concentrations of human MCP1 in seurm in 96-well vs. 384-well plates.

Interpolated concentration of native MCP1 was measured in duplicate at different sample concentrations in 96-well vs. 384-well plates. Undiluted samples are 100% serum. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). Sample dilutions are made in Sample Diluent NS.



Example of human MCP1 standard curve in Sample Diluent NS in 96-well vs. 384-well plate.

Example of human MCP1 standard curve in 96-well vs. 384-well plate. Background-subtracted data values (mean +/- SD) are graphed.



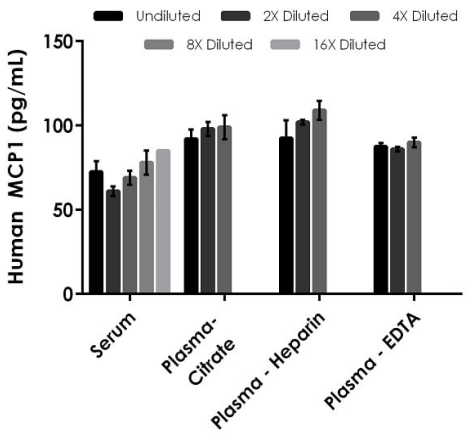
Example of human MCP1 standard curve in Sample Diluent NS.

The MCP1 standard curve was prepared as described in Section 10. Raw data values are shown in the table. Background-subtracted data values (mean +/- SD) are graphed.

Standard Curve Measurements			
Concentration (pg/mL)	O.D 450 nm		Mean O.D
	1	2	
0	0.093	0.094	0.094
4.7	0.139	0.147	0.143
9.4	0.188	0.187	0.187
18.8	0.279	0.275	0.277
37.5	0.444	0.442	0.443
75	0.837	0.864	0.850
150	1.529	1.522	1.525
300	2.985	2.998	2.992

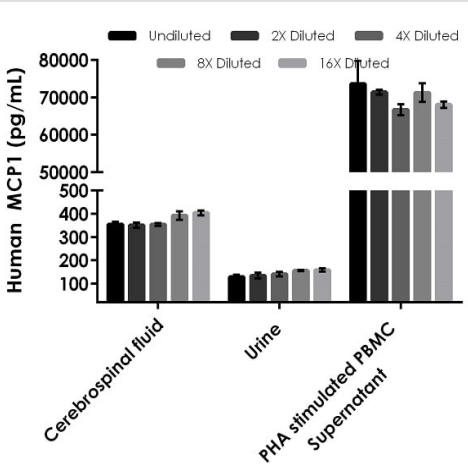
Standard curve

Example of human MCP1 standard curve in Sample Diluent NS. The MCP1 standard curve was prepared as described. Raw data values are shown in the table. Background-subtracted data values (mean +/- SD) are graphed.



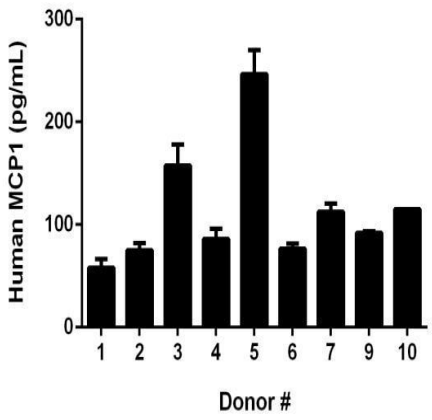
Interpolated concentrations of native MCP1 in human serum and plasma samples.

The concentrations of MCP1 were measured in duplicates, interpolated from the MCP1 standard curves and corrected for sample dilution. Undiluted samples are as follows: serum 100%, plasma (citrate) 25%, plasma (heparin), 25%, and plasma (EDTA). The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean MCP1 concentration was determined to be 72 pg/mL in serum, 96 pg/mL in plasma (citrate), 101 pg/mL in plasma (heparin), and 88 pg/mL plasma (EDTA).



Interpolated concentrations of native MCP1 in human cerebrospinal fluid, urine, and cell culture supernatant samples.

The concentrations of MCP1 were measured in duplicates, interpolated from the MCP1 standard curves and corrected for sample dilution. Undiluted samples are as follows: cerebrospinal fluid (50%)), urine 100%, and PHA stimulated PBMC supernatant 0.25%. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean MCP1 concentration was determined to be 371 pg/mL in cerebrospinal fluid, 144 pg/mL in urine, and 70217 pg/mL in PHA stimulated PBMC supernatant.



Interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean MCP1 concentration was determined to be 113 pg/mL with a range of 58 - 247 pg/mL.

Serum from nine individual healthy human male donors was measured in duplicate.

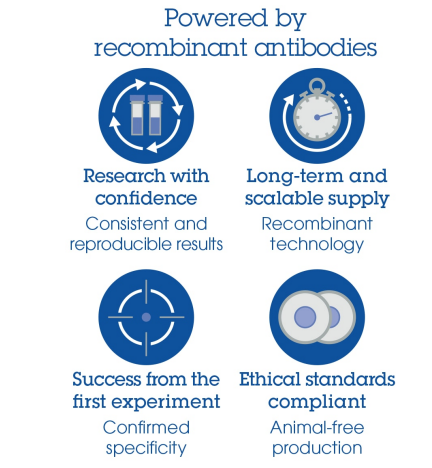
Dilution Factor	Interpolated value	100% Human Serum	25% Human Plasma (Citrate)	25% Human Plasma (EDTA)	25% Human Plasma (Heparin)	0.25% PHA Stim. PBMC Sup	100% Human Urine
Undiluted	pg/mL	72.4	22.9	21.9	23.1	183.9	129.8
	% Expected value	100	100	100	100	100	100
2	pg/mL	30.4	12.3	10.8	12.8	89.3	67.1
	% Expected value	84	107	99	110	97	103
4	pg/mL	17.3	6.2	5.6	6.8	41.7	35.4
	% Expected value	96	108	103	118	91	109
8	pg/mL	9.7	ND	ND	ND	22.3	19.5
	% Expected value	108	-	-	-	97	120
16	pg/mL	5.3	ND	ND	ND	10.6	10.0
	% Expected value	118	-	-	-	93	123

ND – Non-Detectable

Linearity of dilution.

Linearity of dilution is determined based on interpolated values from the standard curve. Linearity of dilution defines a sample concentration interval in which interpolated target concentrations are directly proportional to sample dilution.

Native MCP1 was measured in the following biological samples in a 2-fold dilution series. Sample dilutions are made in Sample Diluent NS.



Sandwich ELISA - Human MCP-1 ELISA Kit (ab179886)

To learn more about the advantages of recombinant antibodies see **here**.

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