

Human ICAM1 ELISA Kit, Fluorescent ab229383

CatchPoint SimpleStep ELISA

[6 Images](#)

Overview

Product name Human ICAM1 ELISA Kit, Fluorescent

Detection method Fluorescent

Precision

Intra-assay

Sample	n	Mean	SD	CV%
General	6			6%

Inter-assay

Sample	n	Mean	SD	CV%
General	24			7%

Sample type

Cell culture supernatant, Serum, Cell culture extracts, Adherent cells, Tissue Extracts, Hep Plasma, EDTA Plasma, Cit plasma

Assay type

Sandwich (quantitative)

Sensitivity

2.4 pg/ml

Range

4.9 pg/ml - 20000 pg/ml

Recovery

Sample specific recovery

Sample type	Average %	Range
Serum	103	99% - 110%
Plasma	113	96% - 126%
Cell culture media	98	91% - 102%
Extraction Buffer	87	82% - 97%

Assay time

1h 30m

Assay duration

One step assay

Species reactivity**Reacts with:** Human**Does not react with:** Goat, Cow, Pig**Product overview**

ICAM1 (CD54) *in vitro* CatchPoint SimpleStep ELISA (Enzyme-Linked Immunosorbent Assay) kit is designed for the quantitative measurement of ICAM1 (CD54) protein in human cell culture supernatant, plasma, serum, and cell extracts.

This CatchPoint SimpleStep ELISA kit has been **optimized for Molecular Devices Microplate Readers**. Click [here](#) for a list of recommended Microplate Readers.

If using a Molecular Devices' plate reader supported by SoftMax® Pro software, a preconfigured protocol for these CatchPoint SimpleStep ELISA Kits is available with all the protocol and analysis settings at www.softmaxpro.org

The CatchPoint SimpleStep ELISA employs an affinity tag labeled capture antibody and a reporter conjugated detector antibody which immunocapture the sample analyte in solution. This entire complex (capture antibody/analyte/detector antibody) is in turn immobilized via immunoaffinity of an anti-tag antibody coating the well. To perform the assay, samples or standards are added to the wells, followed by the antibody mix. After incubation, the wells are washed to remove unbound material. CatchPoint HRP Development Solution containing the Stoplight Red Substrate is added. During incubation, the substrate is catalyzed by HRP generating a fluorescent product. Signal is generated proportionally to the amount of bound analyte and the intensity is measured in a fluorescence plate reader at 530/570/590 nm Excitation/Cutoff/Emission.

Notes

ICAM1, is a cell surface glycoprotein typically expressed in endothelial cells and cells of the immune system. The extracellular portion of ICAM-1 forms five immunoglobulin like domains attached to a single hydrophobic transmembrane region and a short cytoplasmic tail. ICAM-1, binds to the Leukocyte Integrins LFA-1 (CD11a/CD18) and Mac-1 (CD11b/CD18) as well as to non-integrin ligands such as CD43, fibrinogen, hyaluronan, Rhinoviruses and *Plasmodium falciparum*-infected erythrocytes. Binding to LFA-1 facilitates trans-endothelial leukocyte migration to areas of inflammation via promotion of endothelial apical cups assembly.

Abcam has not and does not intend to apply for the REACH Authorisation of customers' uses of products that contain European Authorisation list (Annex XIV) substances.

It is the responsibility of our customers to check the necessity of application of REACH Authorisation, and any other relevant authorisations, for their intended uses.

Platform

Pre-coated microplate (12 x 8 well strips)

Properties**Storage instructions**

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

Components	1 x 96 tests
100X Stoplight Red Substrate	1 x 120µl
10X Human ICAM-1 Capture Antibody	1 x 600µl
10X Human ICAM-1 Detector Antibody	1 x 600µl
10X Wash Buffer PT (ab206977)	1 x 20ml

Components	1 x 96 tests
500X Hydrogen Peroxide (H2O2, 3%)	1 x 50µl
50X Cell Extraction Enhancer Solution (ab193971)	1 x 1ml
5X Cell Extraction Buffer PTR (ab193970)	1 x 10ml
Antibody Diluent 4BI	1 x 6ml
Human ICAM-1 Lyophilized Recombinant Protein	2 vials
Plate Seals	1 unit
Sample Diluent NS (ab193972)	1 x 50ml
SimpleStep Pre-Coated Black 96-Well Microplate	1 unit
Stoplight Red Substrate Buffer	1 x 12ml

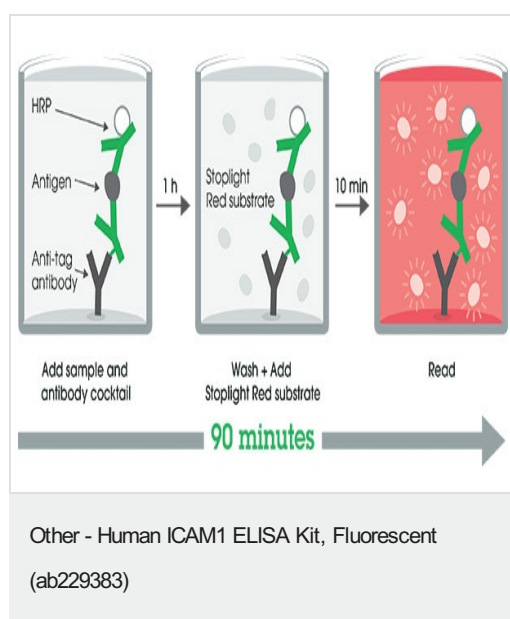
Function ICAM proteins are ligands for the leukocyte adhesion protein LFA-1 (integrin alpha-L/beta-2). During leukocyte trans-endothelial migration, ICAM1 engagement promotes the assembly of endothelial apical cups through ARHGEF26/SGEF and RHO G activation. In case of rhinovirus infection acts as a cellular receptor for the virus.

Sequence similarities Belongs to the immunoglobulin superfamily. ICAM family. Contains 5 Ig-like C2-type (immunoglobulin-like) domains.

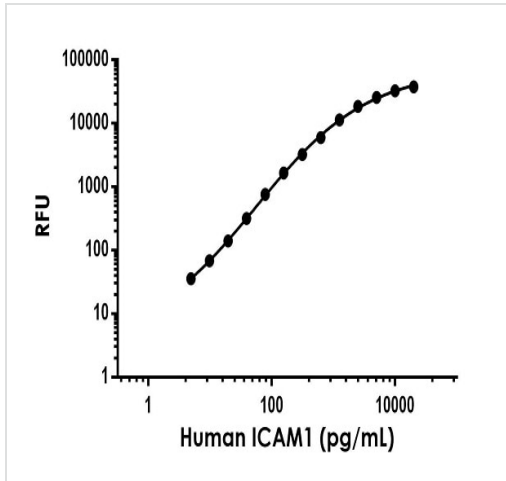
Post-translational modifications Monoubiquitinated, which is promoted by MARCH9 and leads to endocytosis.

Cellular localization Membrane.

Images

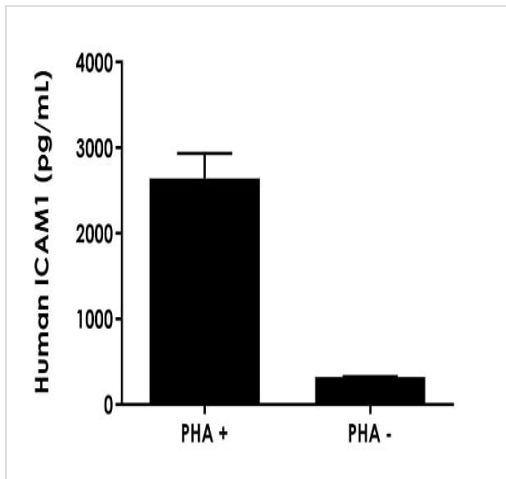


SimpleStep ELISA technology allows the formation of the antibody-antigen complex in one single step, reducing assay time to 90 minutes. Add samples or standards and antibody mix to wells all at once, incubate, wash, and add your final substrate. See protocol for a detailed step-by-step guide.



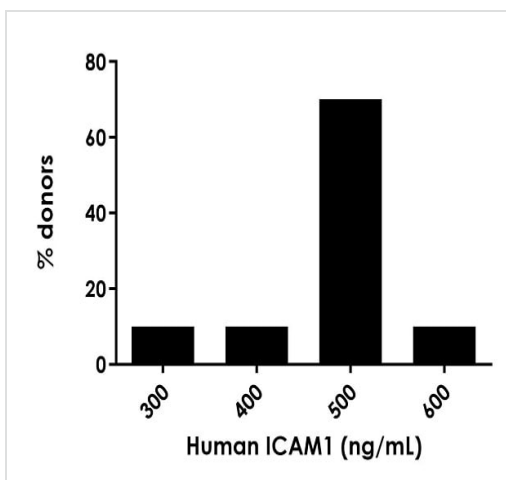
Example of human ICAM1 (CD54) standard curve in Sample Diluent NS.

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



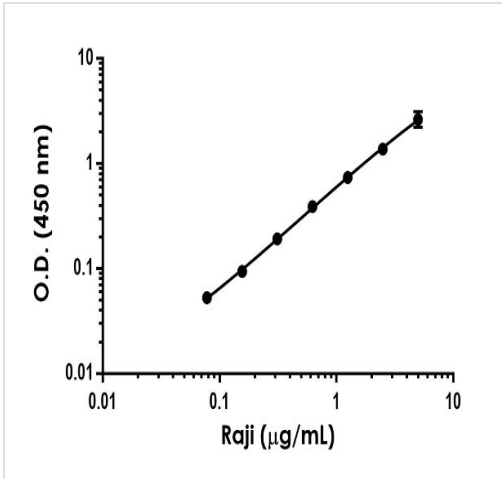
Specificity of ICAM-1 signal on stimulated and unstimulated media supernatants.

Human PBMCs were cultured in RPMI supplemented with 10% fetal calf serum, 2 mM L-glutamine, 100 U/mL penicillin, and 100 µg/mL streptomycin. Cells were cultured for 2 days at 37°C in the presence or absence of PHA. The concentrations of ICAM-1 were interpolated from the calibration curve and corrected for sample dilution. The mean ICAM-1 concentration was determined to be 320 pg/mL in unstimulated PBMC supernatants and 2,654 pg/mL in stimulated PBMC supernatants.



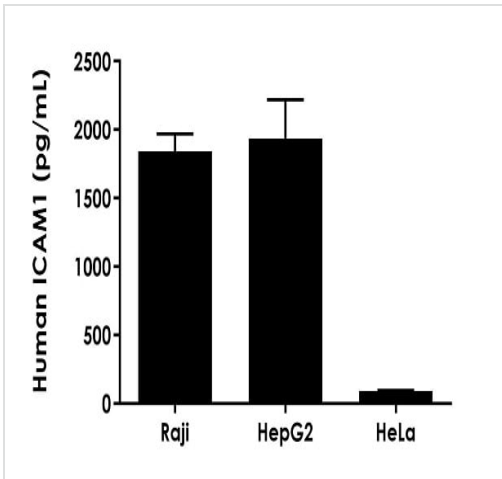
Frequency histogram of ICAM-1 levels in serum of individual normal healthy donors.

The levels of ICAM-1 in serum samples were tested from ten individual healthy donors. Levels were interpolated from the standard curve and corrected for sample dilution. The levels of ICAM-1 are shown for the percentage of individuals within each 100 ng/mL bin center of the distribution. The mean level of ICAM-1 was 469 ng/mL with a range of 347 to 629 ng/mL and a standard deviation of 77 ng/mL.



The curve was prepared by loading 5 µg/mL of Raji cell extracts, followed by a 1:2 titration series. Background-subtracted data values (mean +/- SD) are graphed.

Example of ICAM1 dynamic range in Raji cell extracts.



The levels of ICAM-1 protein were assessed in three human cell line lysates loaded at 2.5 µg/mL of protein. The raw OD 450nm signal for each sample was interpolated from an ICAM1 standard curve.

Comparison of ICAM-1 levels in three human cell culture lysates.

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