

## Product datasheet

### Human IL-1ra ELISA Kit ab211650

**KO VALIDATED** Recombinant SimpleStep ELISA

[2 References](#) [10 Images](#)

#### Overview

**Product name** Human IL-1ra ELISA Kit

**Detection method** Colorimetric

#### Precision

Intra-assay

Sample	n	Mean	SD	CV%
EDTA plasma	5			3.5%

Inter-assay

Sample	n	Mean	SD	CV%
EDTA plasma	3			4.3%

**Sample type**

Cell culture supernatant, Saliva, Milk, Urine, Serum, Plasma, Cell culture extracts, Tissue Extracts

**Assay type**

Sandwich (quantitative)

**Sensitivity**

1.5 pg/ml

**Range**

7.81 pg/ml - 500 pg/ml

**Recovery**

Sample specific recovery

Sample type	Average %	Range
Cell culture supernatant	98	97% - 99%
Saliva	102	96% - 112%
Milk	104	98% - 110%
Urine	102	100% - 106%
Serum	106	82% - 119%
Hep Plasma	103	93% - 117%

Sample type	Average %	Range
EDTA Plasma	105	100% - 113%
Cit plasma	94	80% - 102%

**Assay time**

1h 30m

**Assay duration**

One step assay

**Species reactivity**

**Reacts with:** Human

**Product overview**

Human IL-1ra ELISA Kit (ab211650) is a single-wash 90 min sandwich ELISA designed for the quantitative measurement of IL-1ra protein in milk, plasma, saliva, serum, urine, cell culture extracts, tissue extracts, and cell culture supernatant. It uses our proprietary SimpleStep ELISA® technology. Quantitate Human IL-1ra with 4 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 SimpleStep ELISA® kits.

**Notes**

Interleukin-1 receptor antagonist (IL-1ra, also known as IL-1F3) is a member of the IL-1 cytokine family. IL-1ra inhibits the activity of interleukin-1 by binding to receptor IL1R1 and preventing its association with the coreceptor IL1RAP for signaling. However, IL-1ra has no interleukin-1 like activity. It binds functional interleukin-1 receptor IL1R1 with greater affinity than decoy receptor IL1R2; however, the physiological relevance of the latter association is unsure.

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**

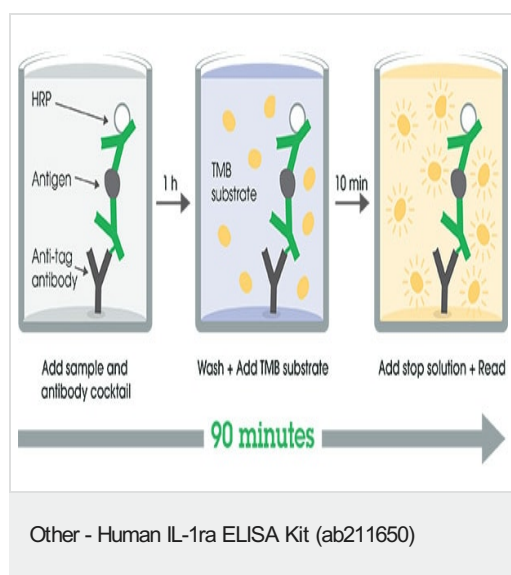
Store at +4°C. Please refer to protocols.

Components	1 x 96 tests
10X Human IL-1Ra Capture Antibody	1 x 600µl

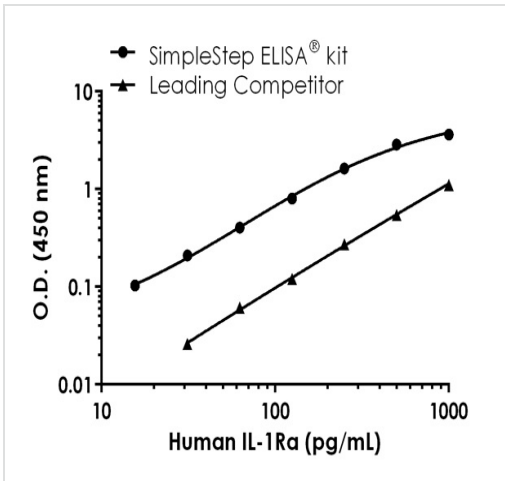
Components	1 x 96 tests
10X Human IL-1Ra Detector Antibody	1 x 600µl
10X Wash Buffer PT (ab206977)	1 x 20ml
50X Cell Extraction Enhancer Solution (ab193971)	1 x 1ml
5X Cell Extraction Buffer PTR (ab193970)	1 x 10ml
Antibody Diluent 4BI	1 x 6ml
Human IL-1Ra Lyophilized Recombinant Protein	2 vials
Plate Seals	1 unit
Sample Diluent NS (ab193972)	1 x 50ml
SimpleStep Pre-Coated 96-Well Microplate (ab206978)	1 unit
Stop Solution	1 x 12ml
TMB Development Solution	1 x 12ml

<b>Function</b>	Inhibits the activity of interleukin-1 by binding to receptor IL1R1 and preventing its association with the coreceptor IL1RAP for signaling. Has no interleukin-1 like activity. Binds functional interleukin-1 receptor IL1R1 with greater affinity than decoy receptor IL1R2; however, the physiological relevance of the latter association is unsure.
<b>Tissue specificity</b>	The intracellular form of IL1RN is predominantly expressed in epithelial cells.
<b>Involvement in disease</b>	Microvascular complications of diabetes 4 Interleukin 1 receptor antagonist deficiency
<b>Cellular localization</b>	Cytoplasm and Secreted.

## Images

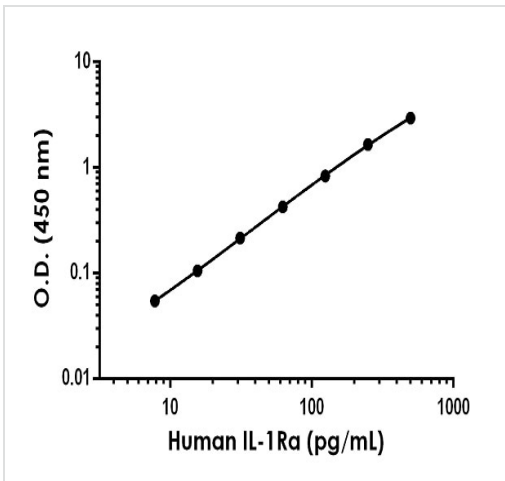


SimpleStep ELISA technology allows the formation of the antibody-antigen complex in one single step, reducing assay time to 90 minutes. Add samples or standards and antibody mix to wells all at once, incubate, wash, and add your final substrate. See protocol for a detailed step-by-step guide.



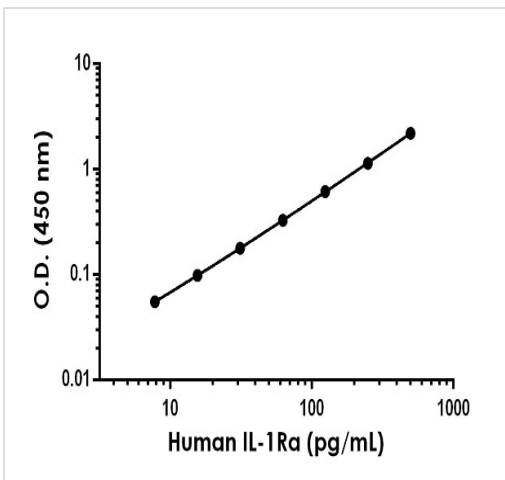
Human IL-1Ra standard curve comparison data.

Standard curve comparison between human IL-1Ra SimpleStep ELISA<sup>®</sup> kit and traditional ELISA kit from leading competitor. SimpleStep ELISA kit shows a 4-fold increase in sensitivity.



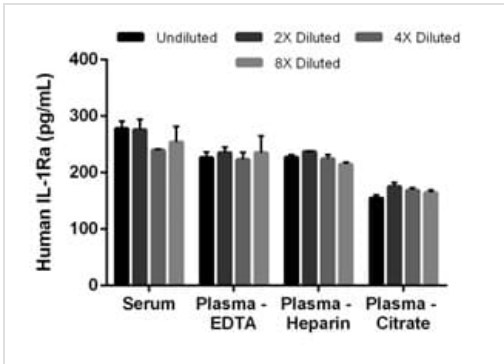
Example of human IL-1Ra standard curve in Sample Diluent NS.

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



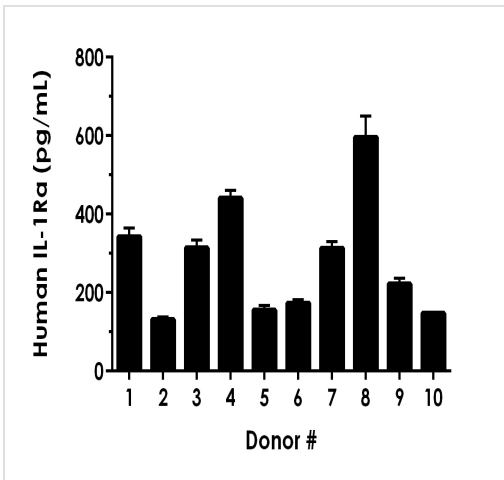
Example of human IL-1Ra standard curve in 1X Cell Extraction Buffer PTR.

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



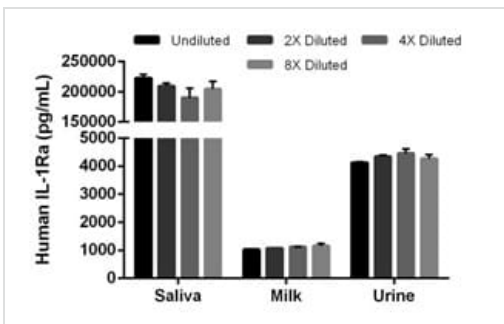
Interpolated concentrations of native IL-1Ra in human serum and plasma samples.

The concentrations of IL-1Ra were measured in duplicates, interpolated from the IL-1Ra standard curves and corrected for sample dilution. Undiluted samples are as follows: serum 100%, plasma (EDTA) 100%, plasma (heparin) 100%; and plasma (citrate) 100%. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean IL-1Ra concentration was determined to be 276 pg/mL in serum, 239 pg/mL in plasma (EDTA) and 233 pg/mL in plasma (heparin) and 170 pg/mL in plasma (citrate).



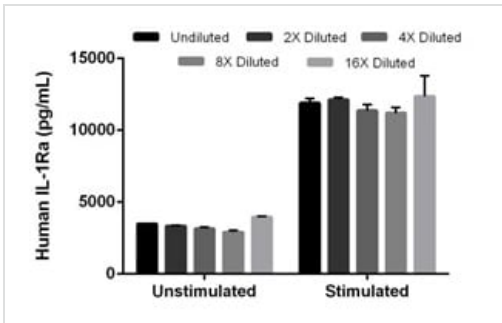
Serum from ten individual healthy human female donors was measured in duplicate.

Interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean IL-1Ra concentration was determined to be 277 pg/mL with a range of 130 – 598 pg/mL.



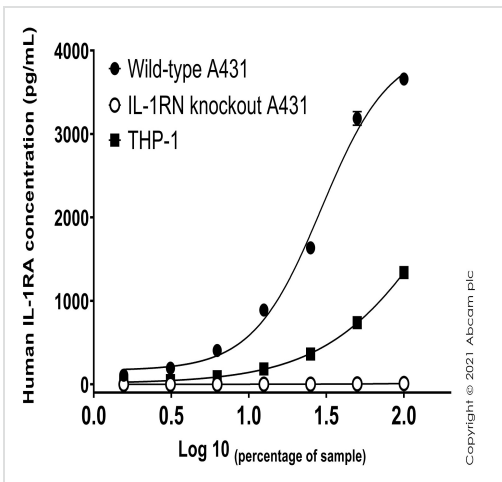
Interpolated concentrations of native IL-1Ra in human saliva, milk and urine samples.

The concentrations of IL-1Ra were measured in duplicates, interpolated from the IL-1Ra standard curves and corrected for sample dilution. Undiluted samples are as follows: saliva 1%, milk 15%, and urine 15%. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean IL-1Ra concentration was determined to be 207 ng/mL in saliva, 1,121 pg/mL in milk and 4,271 pg/mL in urine.



Interpolated concentrations of native IL-1Ra in unstimulated and PHA/PMA stimulated human Peripheral Blood Monocyte (PBMC) Cell samples

The concentrations of IL-1Ra were measured in duplicates, interpolated from the IL-1Ra standard curves and corrected for sample dilution. Undiluted samples are as follows: unstimulated 2% and stimulated 2%. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean IL-1Ra concentration was determined to be 3360 pg/mL in unstimulated, 11,912 pg/mL in stimulated and undetectable in media.



Sandwich ELISA - Human IL-1RA knockout A-431 and THP-1 cells

Human IL-1RA concentration was interpolated from the IL-1RA standard curve. Supernatants from cell culture samples were serially diluted and assessed by the Human IL-1ra ELISA Kit (ab211650). Wild-type A-431, IL1RN knockout A-431 ([ab273379](#)) and THP-1 cells were assessed in duplicate (n=2). Data are represented as the mean and error bars represent standard deviation.

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**Success from the first experiment**  
Confirmed specificity



**Ethical standards compliant**  
Animal-free production

Sandwich ELISA - Human IL-1ra ELISA Kit  
(ab211650)

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

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