

## Product datasheet

### Human IL-6 ELISA Kit ab178013

**KO VALIDATED** Recombinant SimpleStep ELISA

★★★★★ [2 Abreviews](#) [147 References](#) [13 Images](#)

#### Overview

**Product name** Human IL-6 ELISA Kit

**Detection method** Colorimetric

#### Precision

Intra-assay

Sample	n	Mean	SD	CV%
Supernatant	5			2.1%

Inter-assay

Sample	n	Mean	SD	CV%
Supernatant	3			2.4%

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

**Assay type** Sandwich (quantitative)

**Sensitivity** 1.6 pg/ml

**Range** 7.8 pg/ml - 500 pg/ml

#### Recovery

Sample specific recovery

Sample type	Average %	Range
Serum	82	77% - 84%
Cell culture media	100	97% - 103%
EDTA Plasma	82	80% - 85%
Cit plasma	84	81% - 85%
Cerebral Spinal Fluid	90	87% - 93%

**Assay time** 1h 30m

**Assay duration**

One step assay

**Species reactivity**

**Reacts with:** Human

**Product overview**

Human IL-6 ELISA kit (ab178013) is a single-wash 90 min sandwich ELISA designed for the quantitative measurement of IL-6 protein in human serum, plasma and cell culture supernatant. It uses our proprietary SimpleStep ELISA<sup>®</sup> technology. Quantitate human IL-6 with 1.6 pg/ml sensitivity.

SimpleStep ELISA<sup>®</sup> technology employs capture antibodies conjugated to an affinity tag that is recognized by the monoclonal antibody used to coat our SimpleStep ELISA<sup>®</sup> 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<sup>®</sup> protocol summary in the image section for further details. Our SimpleStep ELISA<sup>®</sup> 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<sup>®</sup> microplate ([ab203359](#)) is available to use as an alternative to the 96-well microplate provided with SimpleStep ELISA<sup>®</sup> kits.

**ASSAY SPECIFICITY** This kit recognizes both native and recombinant Human IL-6 protein in serum, plasma, and cell culture supernatant samples only. Cell and tissue extract samples have not been tested with this kit.

**CROSS REACTIVITY** Recombinant Human IL-6Ra was prepared at 50 ng/mL and 500 pg/mL and assayed for cross reactivity. No cross-reactivity was observed.

**INTERFERENCE** Recombinant Human IL-6Ra was prepared at 50 ng/mL and 500 pg/mL and tested for interference. No interference with was observed. 18. **Species Reactivity** This kit recognizes Human IL-6 protein. Recombinant mouse IL-6 was prepared at 500 pg/mL and assayed for cross reactivity. No cross-reactivity was observed. Please contact our Technical Support team for more information

**Notes**

Interleukin 6 (IL6) is a cytokine with a wide variety of biological functions. It is a potent inducer of the acute phase response and plays an essential role in the final differentiation of B-cells into Ig-secreting cells. IL6 is involved in lymphocyte and monocyte differentiation and IL-6 induces myeloma and plasmacytoma growth as well as nerve cells differentiation. B-cells, T-cells, hepatocytes, hematopoietic progenitor cells and cells of the CNS are all responsive to IL6. IL6 is discharged into the bloodstream after muscle contraction and acts to increase the breakdown of fats and to improve insulin resistance.

**Platform**

Microplate (12 x 8 well strips)

**Properties****Storage instructions**

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

Components	1 x 96 tests	10 x 96 tests	1 x 384 tests
10X Human IL-6 Detector Antibody	1 x 600µl	10 x 600µl	1 x 600µl
10X Wash Buffer PT (ab206977)	1 x 20ml	1 x 200ml	1 x 20ml
384 well CaptSure™ microplates	0 x 0 unit	0 x 0 unit	1 unit
Antibody Diluent 5BI	1 x 6ml	10 x 6ml	1 x 6ml
Human IL-6 Capture Antibody (Lyophilized)	1 vial	1 x 10 vials	1 vial
Human IL-6 Lyophilized Recombinant Protein (ab9627)	1 x 2 vials	10 x 2 vials	1 x 2 vials
Plate Seals	1 unit	10 units	1 unit
Sample Diluent NS (ab193972)	1 x 50ml	2 x 250ml	2 x 250ml
SimpleStep Pre-Coated 96-Well Microplate (ab206978)	1 unit	10 units	0 x 0 unit
Stop Solution	1 x 12ml	1 x 120ml	2 x 12ml
TMB Development Solution	1 x 12ml	1 x 120ml	2 x 12ml

#### Function

Cytokine with a wide variety of biological functions. It is a potent inducer of the acute phase response. Plays an essential role in the final differentiation of B-cells into Ig-secreting cells. Involved in lymphocyte and monocyte differentiation. It induces myeloma and plasmacytoma growth and induces nerve cells differentiation. Acts on B-cells, T-cells, hepatocytes, hematopoietic progenitor cells and cells of the CNS. Also acts as a myokine. It is discharged into the bloodstream after muscle contraction and acts to increase the breakdown of fats and to improve insulin resistance.

#### Involvement in disease

Genetic variations in IL6 are associated with susceptibility to rheumatoid arthritis systemic juvenile (RASJ) [MIM:604302]. An inflammatory articular disorder with systemic-onset beginning before the age of 16. It represents a subgroup of juvenile arthritis associated with severe extraarticular features and occasionally fatal complications. During active phases of the disorder, patients display a typical daily spiking fever, an evanescent macular rash, lymphadenopathy, hepatosplenomegaly, serositis, myalgia and arthritis.

Note=A IL6 promoter polymorphism is associated with a lifetime risk of development of Kaposi sarcoma in HIV-infected men.

#### Sequence similarities

Belongs to the IL-6 superfamily.

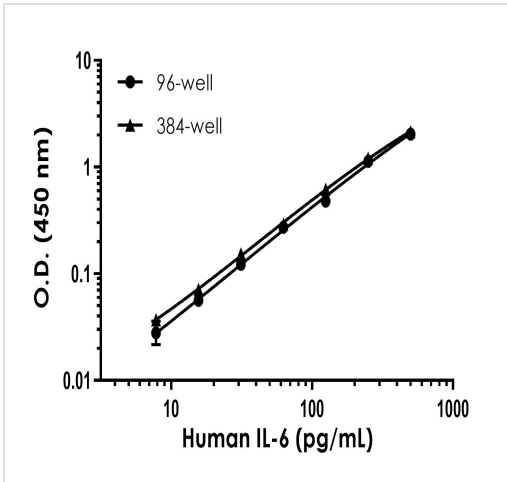
#### Post-translational modifications

N- and O-glycosylated.

#### Cellular localization

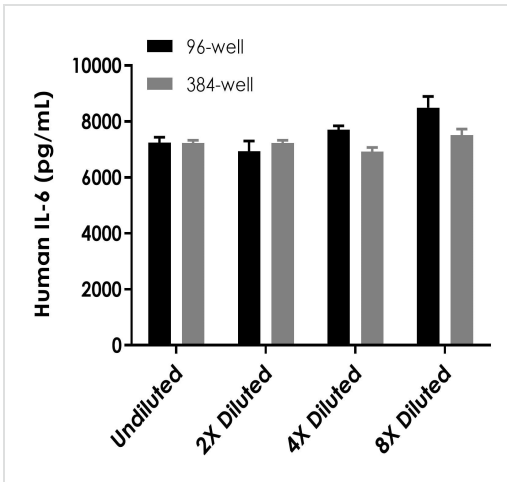
Secreted.

#### Images



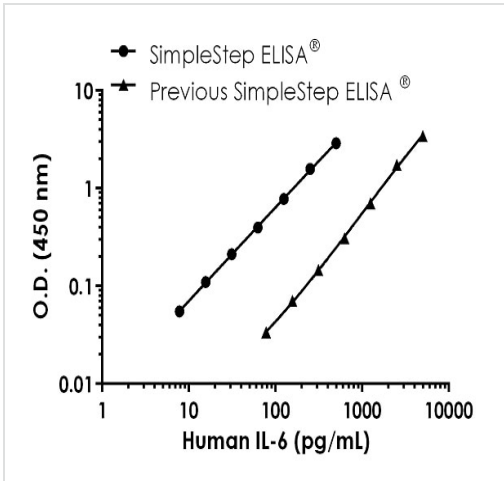
Example of Human IL-6 standard curve in 96-well and 384-well plate. Background-subtracted data values (mean +/- SD) are graphed.

Example of Human IL-6 standard curve in Sample Diluent NS in 96-well and 384-well plate.



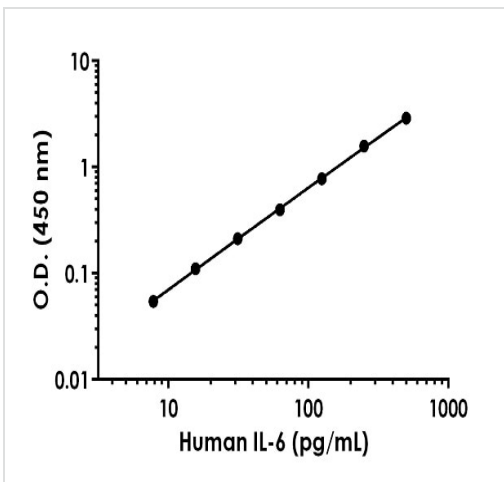
Interpolated concentration of native IL-6 was measured in duplicate at different sample concentrations in 96-well vs. 384-well plates. Undiluted samples are 2% Human Stimulated PBMC supernatant treated with 1.5% PHA-M for 46 hrs. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). Sample dilutions are made in Sample Diluent NS.

Interpolated concentrations of Human IL-6 in human stimulated PBMC supernatant in 96-well and 384-well plates.



Human IL6 standard curve comparison data

Standard curve comparison between the previous Human IL6 SimpleStep ELISA<sup>®</sup> kit and the re-developed Human IL6 SimpleStep ELISA<sup>®</sup> kit. The re-developed kit shows increased sensitivity.



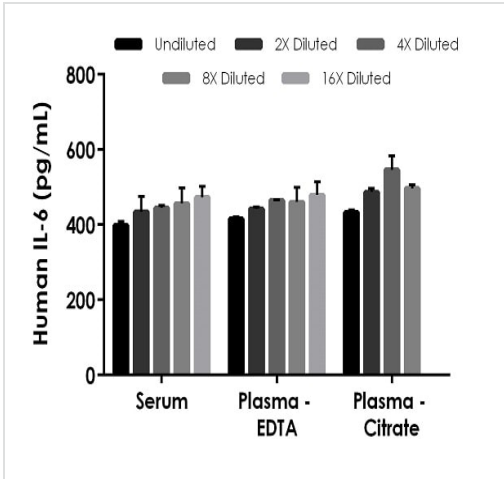
Example of human IL6 standard curve

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

Standard Curve Measurements			
Concentration (pg/ml)	O.D 450 nm		Mean O.D
	1	2	
0	0.056	0.055	0.055
7.8	0.108	0.111	0.109
15.6	0.163	0.166	0.165
31.3	0.267	0.266	0.267
62.5	0.461	0.444	0.453
125	0.781	0.876	0.834
250	1.590	1.672	1.631
500	2.916	2.974	2.945

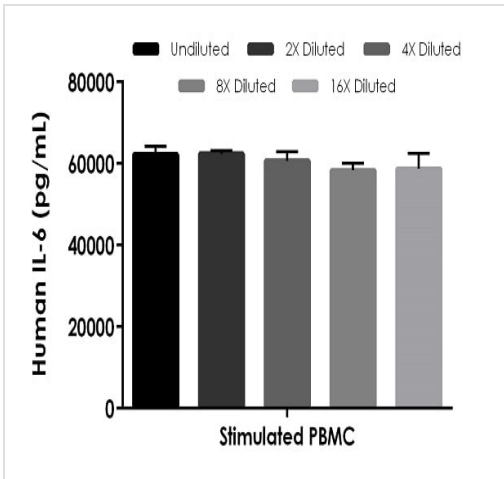
Example of raw data value for of human IL-6 standard curve

Raw data values are shown in the table.



Interpolated concentrations of spiked IL6 in human serum and plasma samples

The concentrations of IL6 were measured in duplicates, interpolated from the IL6 standard curves and corrected for sample dilution. Undiluted samples are as follows: serum 50%, plasma (EDTA) 50%, and plasma (citrate) 25%. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2).



Interpolated concentrations of native IL6 in human peripheral blood monocyte (PBMC) cell culture supernatant samples

The concentrations of IL6 were measured in duplicates, interpolated from the IL6 standard curves and corrected for sample dilution. Undiluted samples are as follows: Stimulated PBMC Cell culture supernatant 1:200. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean IL6 concentration was determined to be 60,443 pg/mL in stimulated PBMC cell culture supernatant, and undetectable in unstimulated and media controls.

Dilution Factor	Interpolated value	50% Human Serum	25% Human Plasma (Citrate)	50% Human Plasma (EDTA)
Undiluted	pg/mL	199.5	108.2	207.7
	% Expected value	100	100	100
2	pg/mL	108.6	60.8	110.6
	% Expected value	109	112	106
4	pg/mL	55.6	34.2	58.1
	% Expected value	112	126	112
8	pg/mL	28.5	15.5	28.8
	% Expected value	114	115	111
16	pg/mL	14.8	NL	15.0
	% Expected value	118		115

Linearity of dilution for spiked recombinant IL-6

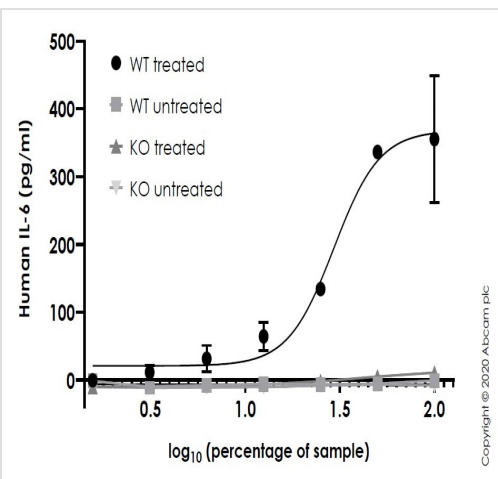
Recombinant IL-6 was spiked into biological samples and diluted in a 2-fold dilution series in Sample Diluent NS. NL= Non linear 50% pooled serum and plasma (EDTA, Citrate) samples from healthy donors was measured in duplicate. All values were below the detectable range of the assay.

50% serum from ten individual healthy human male and female donors was measured in duplicate. All values were below the detectable range of the assay.

Dilution Factor	Interpolated value	1:200 Stimulated PBMC
Undiluted	pg/mL	311.1
	% Expected value	100
2	pg/mL	155.9
	% Expected value	100
4	pg/mL	75.8
	% Expected value	97
8	pg/mL	36.4
	% Expected value	94
16	pg/mL	18.3
	% Expected value	94

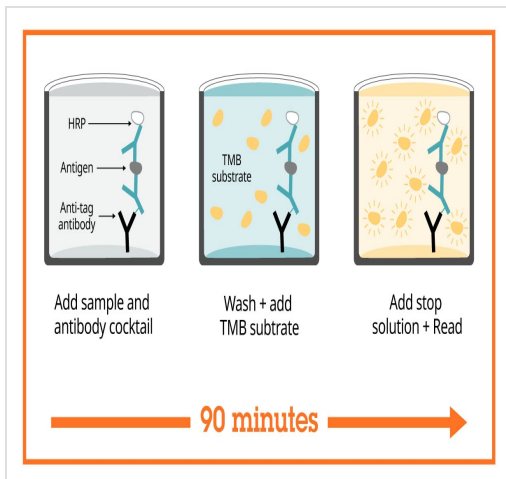
Linearity of dilution for native IL-6

Native IL-6 was measured in biological samples in a 2-fold dilution series. Sample dilutions are made in Sample Diluent NS.



Sandwich ELISA - Human IL-6 ELISA Kit (ab178013)

Human IL-6 concentration was interpolated from the IL-6 standard curve. Supernatants from cell culture samples were serially diluted and assessed by the Human IL-6 ELISA kit (ab178013). Wild-type and IL-6 knockout A549 cells ([ab273751](#)) were assessed in duplicate (n=2). Cells were either treated with 20 ng/mL active recombinant human IL-1 beta protein ([ab259387](#)) for 24 h to induce expression of IL-6 or not treated with IL-1 beta. Data are represented as the mean and error bars represent standard deviation.



Sandwich ELISA - Human IL-6 ELISA Kit (ab178013)

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.

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 IL-6 ELISA Kit (ab178013)

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

**Get more done with SimpleStep ELISA**

- Easy to use**  
Single-wash 90-minute protocol
- Flexible**  
Matched antibody pairs available
- Precision antibodies**  
High sensitivity, specificity and reproducibility
- Scalable**  
Now in 10-pack and 384-well formats

Sandwich ELISA - Human IL-6 ELISA Kit (ab178013)

To learn more about the advantages of SimpleStep ELISA<sup>®</sup> kits see [here](#).



**Please note:** All products are "FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES"

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