

## Product datasheet

# Human IL-2 ELISA Kit ab270883

SimpleStep ELISA

[11 Images](#)

### Overview

**Product name** Human IL-2 ELISA Kit

**Detection method** Colorimetric

#### Precision

Intra-assay

Sample	n	Mean	SD	CV%
Supernatant	8			3.2%

Inter-assay

Sample	n	Mean	SD	CV%
Supernatant	4			8.7%

**Sample type** Cell culture supernatant, Serum, Cell culture media, Hep Plasma, EDTA Plasma

**Assay type** Sandwich (quantitative)

**Sensitivity** 32.1 pg/ml

**Range** 39 pg/ml - 2500 pg/ml

#### Recovery

Sample specific recovery

Sample type	Average %	Range
Cell culture supernatant	108	100% - 120%
Serum	86	83% - 88%
Hep Plasma	82	80% - 85%
EDTA Plasma	89	86% - 93%
Cit plasma	87	84% - 91%

**Assay time** 1h 30m

**Assay duration** One step assay

## Species reactivity

## Product overview

### Reacts with: Human

Human IL-2 ELISA kit (ab270883) is a single-wash 90 min sandwich ELISA designed for the quantitative measurement of IL-2 protein in human serum, plasmas and cell and tissue supernatant. It uses our proprietary SimpleStep ELISA® technology. Quantitate human IL-2 with 32.1 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.

**ASSAY SPECIFICITY:** This kit recognizes both native and recombinant human IL-2 protein in stimulated serum, plasmas, and cell culture supernatant.

Urine, milk, saliva, and cell and tissue extract samples have not been tested with this kit.

**CROSS REACTIVITY:** Recombinant human IL-2R alpha was prepared at 5,000 pg/mL and assayed for cross reactivity. No cross-reactivity was observed.

**INTERFERENCE:** Recombinant human IL-2R alpha was prepared at 5,000 pg/mL and tested for interference. No interference with was observed.

**SPECIES REACTIVITY:** This kit recognizes human IL-2 protein.

No signal was observed in 50% serum samples from the following species: Mouse, Rat, Cow.

## Notes

IL-2, also known as T cell growth factor (TCGF), is a glycosylated alpha-helical polypeptide, synthesized as a 153 amino acid (aa) precursor with a 20 aa signal peptide and a 133 aa mature chain. It is secreted by activated CD4+ and CD8+ T cells, neurons, microglia and hematopoietic stem cells in response to antigenic or mitogenic stimulation. IL-2 is required for T-cell proliferation, Natural Killer cells (NK) cytolytic activity, differentiation of regulatory T cells, modulation of T helper (Th) cell differentiation and activation-induced cell death. IL-2 modulates the expression of

receptors for other cytokines and transcription factors, therefore regulating cytokine cascades that correlate with each of the Th differentiation states. IL-2 is both an immune stimulator and immune suppressor cytokine, which efficiently controls the immune system to deal with autoimmunity and adaptive immune response.

**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-2 Capture Antibody	1 x 600µl
10X Human IL-2 Detector Antibody	1 x 600µl
10X Wash Buffer PT (ab206977)	1 x 20ml
Antibody Diluent 4BI	1 x 6ml
Human IL-2 Lyophilized Recombinant Protein	2 vials
Plate Seals	1 unit
Sample Diluent 50BP	1 x 20ml
Sample Diluent NS (ab193972)	1 x 12ml
SimpleStep Pre-Coated 96-Well Microplate (ab206978)	1 unit
Stop Solution	1 x 12ml
TMB Development Solution	1 x 12ml

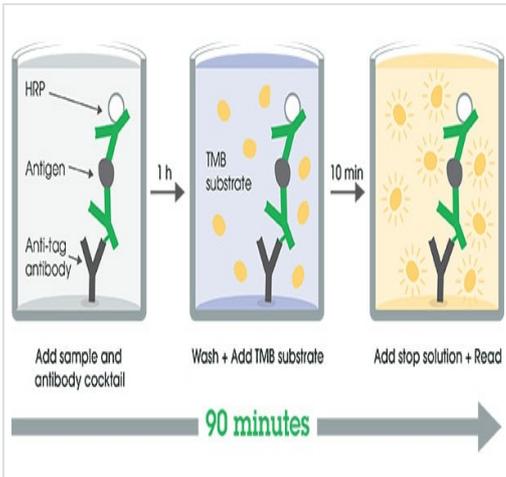
**Function** Produced by T-cells in response to antigenic or mitogenic stimulation, this protein is required for T-cell proliferation and other activities crucial to regulation of the immune response. Can stimulate B-cells, monocytes, lymphokine-activated killer cells, natural killer cells, and glioma cells.

**Involvement in disease** Note=A chromosomal aberration involving IL2 is found in a form of T-cell acute lymphoblastic leukemia (T-ALL). Translocation t(4;16)(q26;p13) with involves TNFRSF17.

**Sequence similarities** Belongs to the IL-2 family.

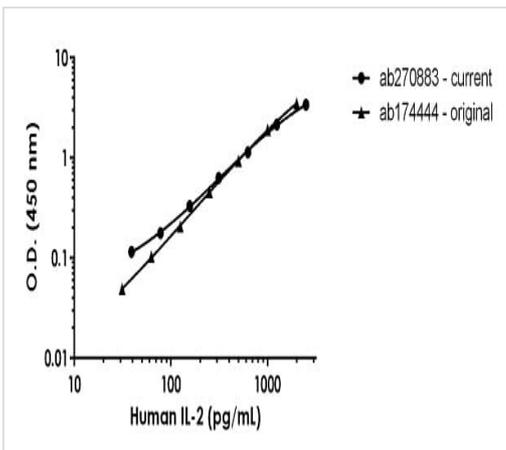
**Cellular localization** Secreted.

**Images**



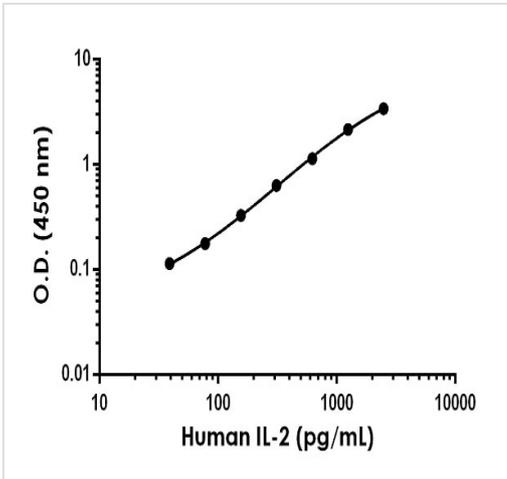
SimpleStep ELISA Protocol Diagram

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-2 standard curve comparison

Standard Curve comparison between the original Human IL-2 SimpleStep ELISA kit ([ab174444](#)) and current Human IL-2 SimpleStep ELISA kit ([ab270883](#)).



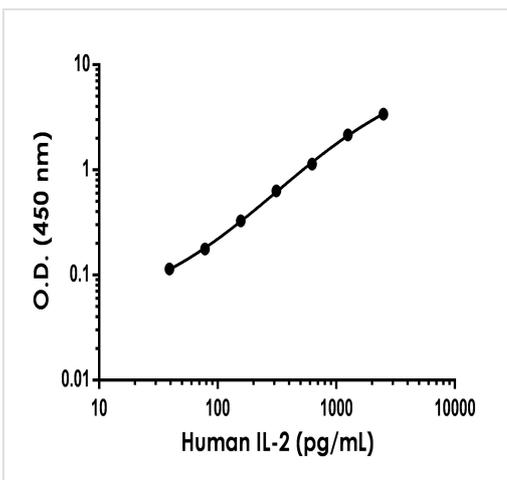
Example of human IL-2 standard curve in Sample Diluent NS.

The IL-2 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	0.088	0.088	0.088
39	0.209	0.196	0.203
78	0.272	0.258	0.265
156	0.423	0.411	0.417
313	0.735	0.706	0.720
625	1.230	1.224	1.227
1,250	2.268	2.222	2.245
2,500	3.505	3.481	3.493

Standard curve in Sample Diluent NS

Example of human IL-2 standard curve in Sample Diluent NS. Raw data values are shown in the table. Background-subtracted data values (mean +/- SD) are graphed.



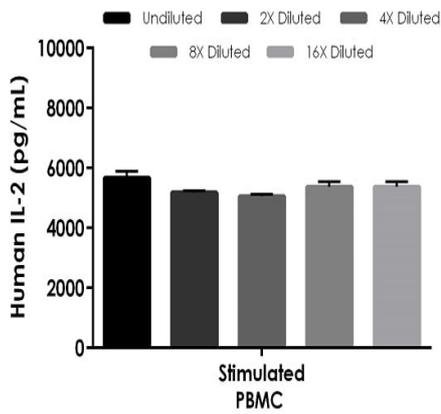
Standard curve in Sample Diluent 50BP

Example of human IL-2 standard curve in Sample Diluent 50BP. 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	0.069	0.069	0.069
94	0.158	0.159	0.159
188	0.245	0.244	0.244
375	0.383	0.382	0.382
750	0.649	0.647	0.648
1,500	1.134	1.097	1.115
3,000	2.200	2.108	2.154
6,000	3.543	3.460	3.502

Standard curve in Sample Diluent 50BP

Example of human IL-2 standard curve in Sample Diluent 50BP. Raw data values are shown in the table. Background-subtracted data values (mean +/- SD) are graphed.



Interpolated concentrations of native IL-2 in human stimulated PBMCs.

The concentrations of IL-2 were measured in duplicates, interpolated from the target standard curves and corrected for sample dilution. Undiluted samples are as follows: PBMCs stimulated with 1.5% PHAM for 48 hours (25%). The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean target concentration was determined to be 5,330 pg/mL in stimulated PBMCs.

Sample Diluent Buffer	n=	Minimal Detectable Dose
NS	16	32.1 pg/mL
50BP	16	19.8 pg/mL

Assay sensitivity.

The MDD was determined by calculating the mean of zero standard replicates and adding 2 standard deviations then extrapolating the corresponding concentration.

Dilution Factor	Interpolated value	25% Human Serum	25% Human Plasma (EDTA)	25% Human Plasma (Citrate)	25% Human Plasma (Heparin)
Undiluted	pg/mL	1,376	1,507	1,259	864
	% Expected value	100	100	100	100
2	pg/mL	672	716	591	499
	% Expected value	98	95	94	116
4	pg/mL	352	374	373	251
	% Expected value	102	99	119	116
8	pg/mL	165	190	190	137
	% Expected value	96	101	118	117
16	pg/mL	NL	106	NL	NL
	% Expected value		113		

NL - Non-Linear

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.

Recombinant IL-2 was spiked into the following biological samples and diluted in a 2-fold dilution series in Sample Diluent 50BP.

50% pooled serum samples from eight healthy donors was measured in duplicate. All values were below the detectable range of the assay.

Dilution Factor	Interpolated value	50% Human RPMI 10% FBS
Undiluted	pg/mL	1,242
	% Expected value	100
2	pg/mL	540
	% Expected value	87
4	pg/mL	278
	% Expected value	89
8	pg/mL	147
	% Expected value	95
16	pg/mL	68
	% Expected value	88

Linearity of dilution.

Recombinant IL-2 was spiked into the following biological samples and diluted in a 2-fold dilution series in Sample Diluent NS.

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

Dilution Factor	Interpolated value	25% PBMC
Undiluted	pg/mL	1,418
	% Expected value	100
2	pg/mL	648
	% Expected value	91
4	pg/mL	316
	% Expected value	89
8	pg/mL	168
	% Expected value	95
16	pg/mL	84
	% Expected value	95

Linearity of dilution.

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

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