abcam

Product datasheet

Human IL-4 ELISA Kit ab215089

Recombinant SimpleStep ELISA

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Overview

Product name Human IL-4 ELISA Kit

Detection method Colorimetric

Precision

Intra-assay

Sample	n	Mean	SD	CV%
Overall	5			6%

Inter-assay

Sample	n	Mean	SD	CV%
Overall	3			7%

Sample type Cell culture supernatant, Serum, Plasma, Hep Plasma, EDTA Plasma, Cit plasma

Assay type Sandwich (quantitative)

Sensitivity 1.08 pg/ml

Range 6.25 pg/ml - 400 pg/ml

Recovery

Sample specific recovery

Sample type	Average %	Range
Serum	95	91% - 102%
Cell culture media	117	112% - 120%
Hep Plasma	95	88% - 98%
EDTA Plasma	109	103% - 114%
Cit plasma	100	94% - 104%

Assay time 1h 30m

Assay duration One step assay

Species reactivity

Reacts with: Human

Product overview

Human IL-4 ELISA Kit (ab215089) is a single-wash 90 min sandwich ELISA designed for the quantitative measurement of IL-4 protein in cit plasma, edta plasma, hep plasma, plasma, serum, and cell culture supernatant. It uses our proprietary SimpleStep ELISA® technology. Quantitate Human IL-4 with 1.08 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

IL-4 is a 129 amino acids long secreted protein. IL-4 is a cytokine produced mostly by activated T lymphocytes, mast cells and basophils. It has variety of immune response modulating functions by acting on number of cell types. IL-4 participates in several B-cell activation processes. It is a co-stimulator of DNA-synthesis. It induces the expression of class II MHC molecules on resting B-cells. It enhances both secretion and cell surface expression of IgE and IgG1. It also regulates the expression of the low affinity Fc receptor for IgE (CD23) on both lymphocytes and monocytes. IL-4 positively regulates IL31RA expression in macrophages.

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 Wash Buffer PT (ab206977)	1 x 20ml
Antibody Diluent 5BI	1 x 6ml
10X Human IL-4 Capture Antibody	1 x 600µl
10X Human IL-4 Detector Antibody	1 x 600µl
Human IL-4 Lyophilized Recombinant Protein	2 vials
Plate Seals	1 unit
Sample Diluent 75BS	1 x 20ml

Components	1 x 96 tests
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

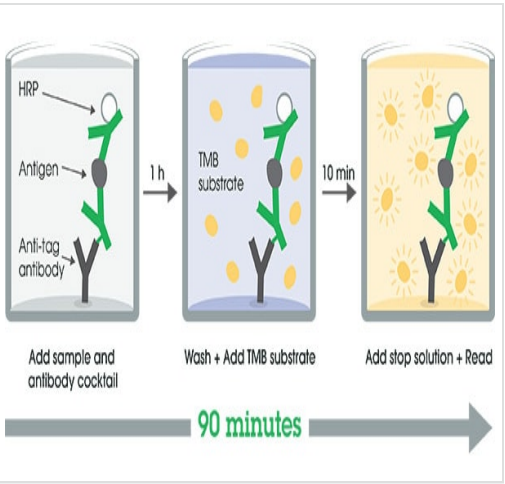
Function Participates in at least several B-cell activation processes as well as of other cell types. It is a costimulator of DNA-synthesis. It induces the expression of class II MHC molecules on resting B-cells. It enhances both secretion and cell surface expression of IgE and IgG1. It also regulates the expression of the low affinity Fc receptor for IgE (CD23) on both lymphocytes and monocytes.

Involvement in disease Genetic variations in IL4 may be a cause of susceptibility to ischemic stroke (ISCHSTR) [MIM:601367]; also known as cerebrovascular accident or cerebral infarction. A stroke is an acute neurologic event leading to death of neural tissue of the brain and resulting in loss of motor, sensory and/or cognitive function. Ischemic strokes, resulting from vascular occlusion, is considered to be a highly complex disease consisting of a group of heterogeneous disorders with multiple genetic and environmental risk factors.

Sequence similarities Belongs to the IL-4/IL-13 family.

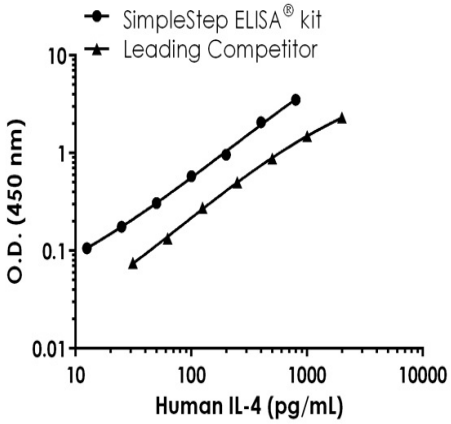
Cellular localization Secreted.

Images



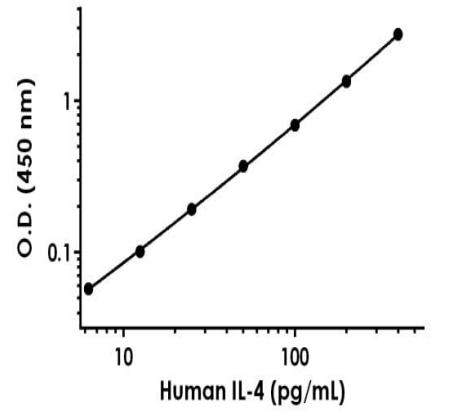
SimpleStep ELISA technology allows the formation of the antibody-antigen complex in one single step, reducing assay time to 90 minutes. Add samples or standards and antibody mix to wells all at once, incubate, wash, and add your final substrate. See protocol for a detailed step-by-step guide.

Other - Human IL-4 ELISA Kit (ab215089)



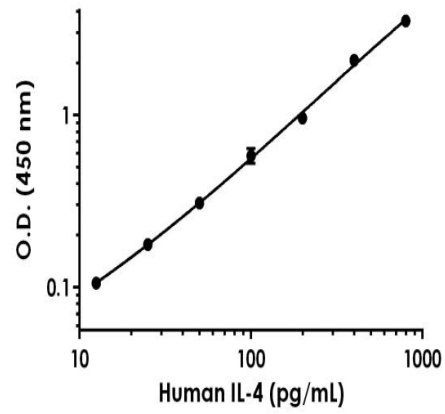
Human IL-4 standard curve comparison data.

Standard curve comparison between human IL-4 SimpleStep ELISA® kit and traditional ELISA kit from leading competitor. SimpleStep ELISA kit shows a 8-fold increase in sensitivity.



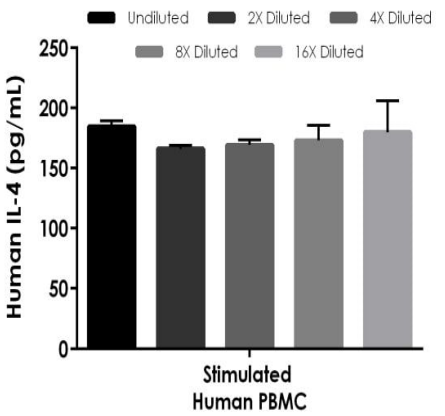
Example of human IL-4 standard curve in Sample Diluent NS.

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



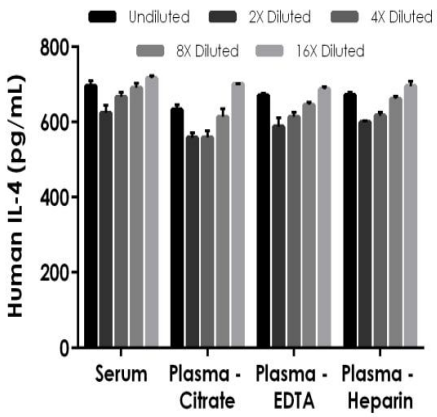
Example of human IL-4 standard curve in Sample Diluent 75BS.

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



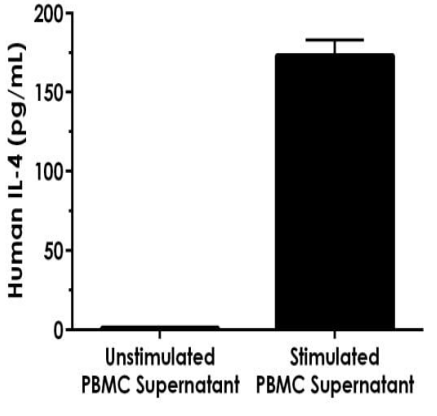
Interpolated concentrations of native IL-4 in PHA-M stimulated human PBMC cell culture supernatant samples.

The concentrations of IL-4 were measured in duplicates, interpolated from the IL-4 standard curves and corrected for sample dilution. Undiluted samples are as follows: stimulated human PBMC cell culture supernatant 100%. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean IL-4 concentration was determined to be 174.6 pg/mL in stimulated human PBMC cell culture supernatant.



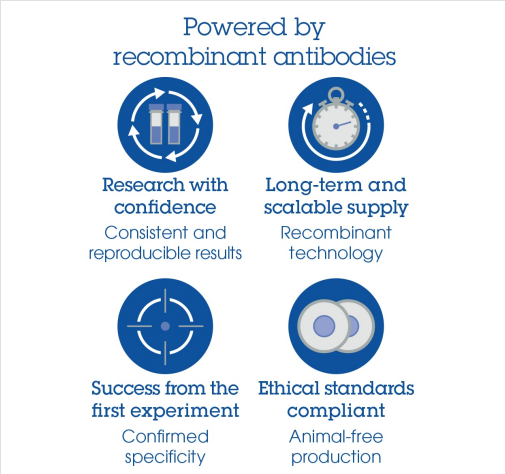
Interpolated concentrations of spike recombinant IL-4 in serum and plasma samples.

The concentrations of IL-4 were measured in duplicates, interpolated from the IL-4 standard curves and corrected for sample dilution. Undiluted samples are as follows: serum 100%, plasma citrate 100%, plasma EDTA 100%, plasma heparin 100%. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2).



Comparison of IL-4 in unstimulated and PHA-M stimulated human PBMC cell supernatants.

Human PBMC cells were cultured in the absence or presence of 1.5% PHA-M for 46 hours. The concentrations of Il-4 were measured in neat supernatant samples in duplicates and interpolated from the IL-4 standard curve. The interpolated values are plotted (mean +/- SD, n=2). The mean IL-4 concentration was determined to be 174.6 pg/mL in PHA-M stimulated PBMC cell supernatant, 1.4 pg/mL in unstimulated supernatants and undetectable in media (not shown).



Sandwich ELISA - Human IL-4 ELISA Kit (ab215089)

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

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