

Recombinant SimpleStep ELISA®

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Overview

Detection method	Colorimetric
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Intra-assay

Sample	n	Mean	SD	CV%
Spiked Serum	3			2.7%

Inter-assay

Sample	n	Mean	SD	CV%
Spiked Serum	5			3.2%

Range 11.72 pg/ml - 750 pg/ml

Sample specific recovery

Sample type	Average %	Range
Serum	87	83% - 95%
Cell culture extracts	95	92% - 100%
Cell culture media	102	96% - 108%
Hep Plasma	102	97% - 110%
EDTA Plasma	106	100% - 112%

Assay duration	One step assay
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Species reactivity**Reacts with:** Human**Product overview**

Human IL-33 ELISA Kit (ab223865) is a single-wash 90 min sandwich ELISA designed for the quantitative measurement of IL-33 protein in cell culture supernatant, plasma, serum, and cell culture extracts. It uses our proprietary SimpleStep ELISA® technology. Quantitate Human IL-33 with 4.7 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-33 (Interleukin-33, also known as IL-1F11 or NF-HEV) is a proinflammatory cytokine member of the IL-1 family. It is widely expressed and functions by binding and signaling through the IL-1RL1/ST2 receptor. IL-33 is expressed as a pro-protein; the antibodies in this kit were generated using the mature form of IL-33 (aa 109-270).

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 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
10X Human IL-33 Capture Antibody	1 x 600µl
10X Human IL-33 Detector Antibody	1 x 600µl

Components	1 x 96 tests
Human IL-33 Lyophilized Recombinant Protein	2 vials
Plate Seals	1 unit
Sample Diluent 50BP	1 x 20ml
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

Cytokine that binds to and signals through the IL1RL1/ST2 receptor which in turn activates NF-kappa-B and MAPK signaling pathways in target cells (PubMed:16286016). Involved in the maturation of Th2 cells inducing the secretion of T-helper type 2-associated cytokines. Also involved in activation of mast cells, basophils, eosinophils and natural killer cells. Acts as a chemoattractant for Th2 cells, and may function as an "alarmin", that amplifies immune responses during tissue injury (PubMed:17853410, PubMed:18836528).

In quiescent endothelia the uncleaved form is constitutively and abundantly expressed, and acts as a chromatin-associated nuclear factor with transcriptional repressor properties, it may sequester nuclear NF-kappaB/RELA, lowering expression of its targets (PubMed:21734074). This form is rapidly lost upon angiogenic or proinflammatory activation (PubMed:18787100).

Tissue specificity

Expressed at high level in high endothelial venules found in tonsils, Peyer patches and mesenteric lymph nodes. Almost undetectable in placenta.

Sequence similarities

Belongs to the IL-1 family. Highly divergent.

Domain

The homeodomain-like HTH domain mediates nuclear localization and heterochromatin association.

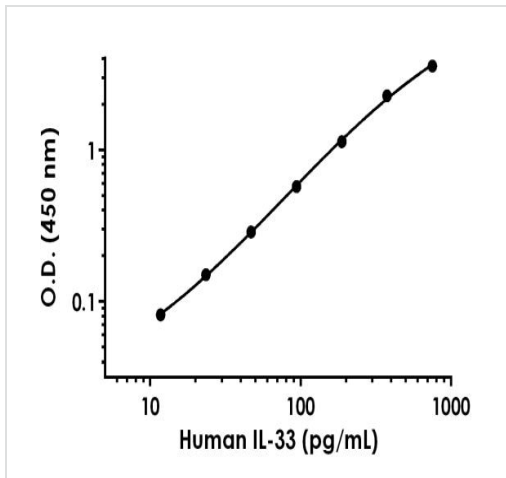
Post-translational modifications

The full length protein can be released from cells and is able to signal via the IL1RL1/ST2 receptor. However, proteolytic processing by CSTG/cathepsin G and ELANE/neutrophil elastase produces C-terminal peptides that are more active than the unprocessed full length protein. May also be proteolytically processed by calpains (PubMed:19596270). Proteolytic cleavage mediated by apoptotic caspases including CASP3 and CASP7 results in IL33 inactivation (PubMed:19559631). In vitro proteolytic cleavage by CASP1 was reported (PubMed:16286016) but could not be confirmed in vivo (PubMed:19465481) suggesting that IL33 is probably not a direct substrate for that caspase.

Cellular localization

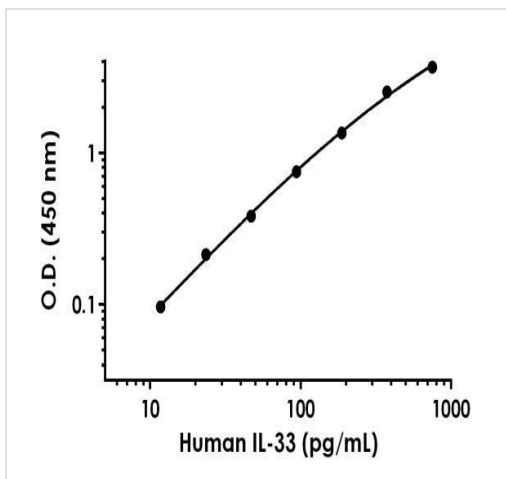
Nucleus. Chromosome. Cytoplasmic vesicle, secretory vesicle. Secreted. Associates with heterochromatin and mitotic chromosomes (PubMed:17185418).

Images



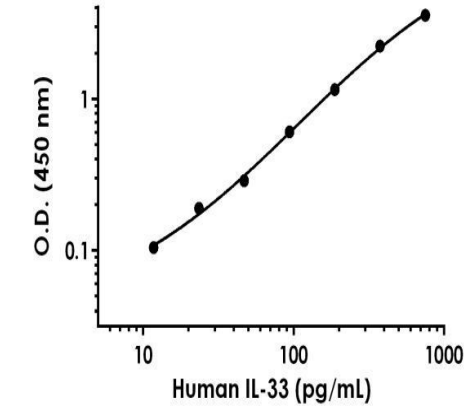
Background-subtracted data values (mean \pm SD) are graphed.

Example of human IL33 standard curve in Sample Diluent 50BP.



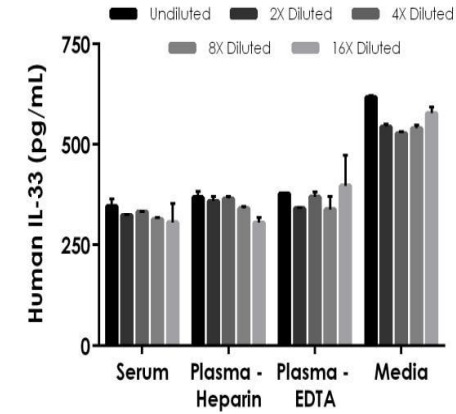
Background-subtracted data values (mean \pm SD) are graphed.

Example of human IL33 standard curve in Sample Diluent NS.



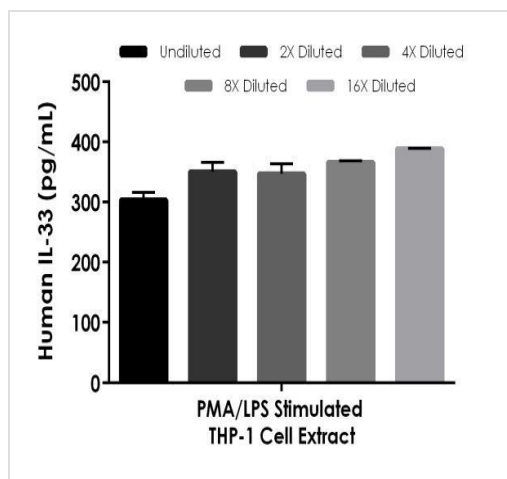
Background-subtracted data values (mean +/- SD) are graphed.

Example of human IL33 standard curve in 1X Cell Extraction Buffer PTR.



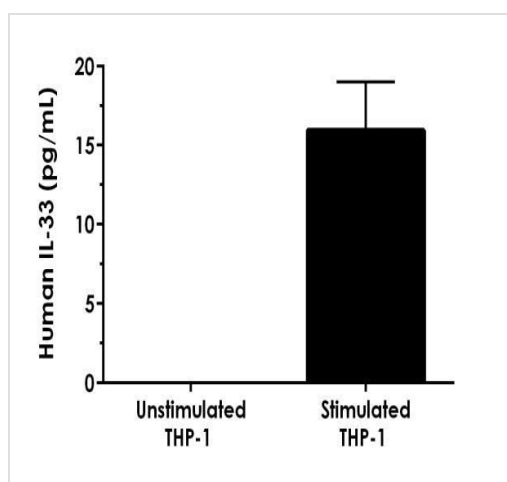
The concentrations of IL33 were measured in duplicates, interpolated from the IL33 standard curves and corrected for sample dilution. Undiluted samples are as follows: serum neat, plasma (heparin) neat, plasma (EDTA) neat and RPMI + 10% FBS neat. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2).

Interpolated concentrations of spike IL33 in human serum, plasma and cell culture media (RPMI + 10% FBS) samples.



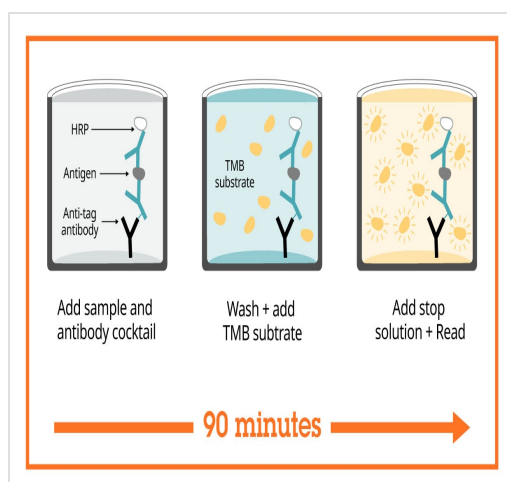
Interpolated concentrations of native IL33 in human PMA/LPS stimulated THP-1 cell extract based on a 1,000 µg/mL extract load.

The concentrations of IL33 were measured in duplicate and interpolated from the IL33 standard curve and corrected for sample dilution. The interpolated dilution factor corrected values are plotted (mean \pm SD, n=2). The mean IL33 concentration was determined to be 351.5 pg/mL in PMA/LPS stimulated THP-1 cell extract and undetectable in unstimulated THP-1 cell extract (not shown).



Comparison of IL33 in unstimulated and PMA/LPS stimulated THP-1 cell supernatants.

THP-1 cells were cultured for 24 hours in the presence or absence of 50 ng/mL PMA and 10 µg/mL LPS. The concentrations of IL33 were measured in neat supernatant samples in quadruplicates and interpolated from the IL33 standard curve. The interpolated values are plotted (mean \pm SD, n=3). The mean IL33 concentration was determined to be 15.95 pg/mL in neat PMA/LPS stimulated THP-1 cell culture supernatant and undetectable in neat unstimulated THP-1 cell culture supernatant and RPMI media (not shown).



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.

Sandwich ELISA - Human IL-33 ELISA Kit
(ab223865)

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-33 ELISA Kit
(ab223865)

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-33 ELISA Kit
(ab223865)

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

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