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Product datasheet

Mouse IL-1 beta ELISA Kit, Fluorescent ab229440

Recombinant CatchPoint SimpleStep ELISA

1 References 5 Images

Overview

Product name Mouse IL-1 beta ELISA Kit, Fluorescent

Detection method Fluorescent

Precision

Intra-assay

Sample	n	Mean	SD	CV%
Cell medium	5			6.1%

Inter-assay

Sample	n	Mean	SD	CV%
Cell medium	3			7.7%

Sample type Cell culture supernatant, Urine, Serum, Cell culture extracts, Tissue Extracts, Hep Plasma, EDTA Plasma, Cit plasma

Assay type Sandwich (quantitative)

Sensitivity 0.2 pg/ml

Range 0.2 pg/ml - 200 pg/ml

Recovery

Sample specific recovery

Sample type	Average %	Range
Cell culture supernatant	105	100% - 108%
Urine	94	91% - 95%
Serum	101	98% - 103%
Plasma	89	78% - 95%
Tissue Homogenate	97	95% - 100%

Assay time 1h 30m

Assay duration	One step assay
Species reactivity	**Reacts with:** Mouse
Product overview	IL-1 beta (Interleukin-1 beta) *in vitro* CatchPoint SimpleStep ELISA (Enzyme-Linked Immunosorbent Assay) kit is designed for the quantitative measurement of IL-1 beta (Interleukin-1 beta) protein in mouse serum, plasma, urine, cell culture supernatant, and cell and tissue extracts. This CatchPoint SimpleStep ELISA kit has been **optimized for Molecular Devices Microplate Readers**. Click **here** for a list of recommended Microplate Readers. If using a Molecular Devices' plate reader supported by SoftMax® Pro software, a preconfigured protocol for these CatchPoint SimpleStep ELISA Kits is available with all the protocol and analysis settings at **www.softmaxpro.org**. The CatchPoint SimpleStep ELISA employs an affinity tag labeled capture antibody and a reporter conjugated detector antibody which immunocapture the sample analyte in solution. This entire complex (capture antibody/analyte/detector antibody) is in turn immobilized via immunoaffinity of an anti-tag antibody coating the well. To perform the assay, samples or standards are added to the wells, followed by the antibody mix. After incubation, the wells are washed to remove unbound material. CatchPoint HRP Development Solution containing the Stoplight Red Substrate is added. During incubation, the substrate is catalyzed by HRP generating a fluorescent product. Signal is generated proportionally to the amount of bound analyte and the intensity is measured in a fluorescence plater reader at 530/570/590 nm Excitation/Cutoff/Emission.
Notes	Interleukin-1 beta (IL-1 beta) is a 17.5 kDa cytokine protein of the Interleukin 1 family. IL-1 beta is secreted by macrophages and other cell types in response to inflammatory agents or infection. IL-1 beta plays a role in a number of cellular processes, including immune responses, bone remodeling, apoptosis and inflammatory pain hypersensitivity. 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

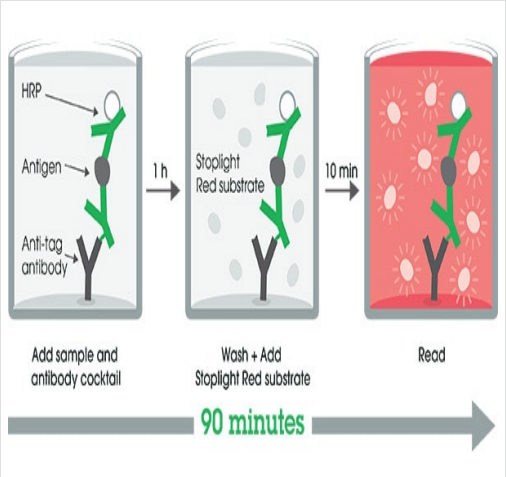
Storage instructions	Store at +4°C. Please refer to protocols.

Components	1 x 96 tests
100X Stoplight Red Substrate	1 x 120µl
10X Mouse IL-1 beta Capture Antibody	1 x 600µl
10X Mouse IL-1 beta Detector Antibody	1 x 600µl
10X Wash Buffer PT (ab206977)	1 x 20ml
500X Hydrogen Peroxide (H_2O_2, 3%)	1 x 50µl

Components	1 x 96 tests
50X Cell Extraction Enhancer Solution (ab193971)	1 x 1ml
5X Cell Extraction Buffer PTR (ab193970)	1 x 10ml
Antibody Diluent 5BI	1 x 6ml
Mouse IL-1 beta Lyophilized Recombinant Protein	2 vials
Plate Seals	1 unit
Sample Diluent NS (ab193972)	1 x 50ml
SimpleStep Pre-Coated Black 96-Well Microplate	1 unit
Stoplight Red Substrate Buffer	1 x 12ml

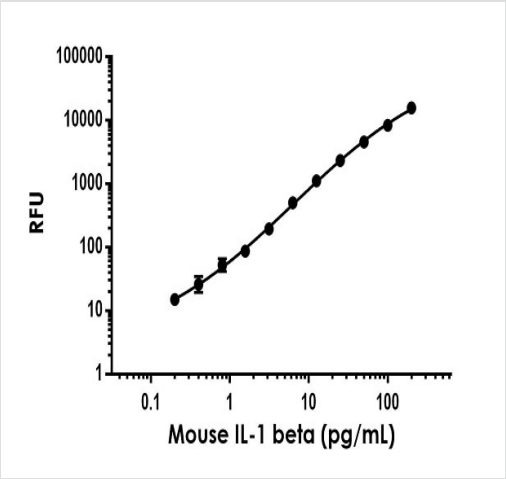
Function	Potent proinflammatory cytokine. Initially discovered as the major endogenous pyrogen, induces prostaglandin synthesis, neutrophil influx and activation, T-cell activation and cytokine production, B-cell activation and antibody production, and fibroblast proliferation and collagen production. Promotes Th17 differentiation of T-cells.
Tissue specificity	Expressed in activated monocytes/macrophages (at protein level).
Sequence similarities	Belongs to the IL-1 family.
Post-translational modifications	Activation of the IL1B precursor involves a CASP1-catalyzed proteolytic cleavage. Processing and secretion are temporarily associated.
Cellular localization	Cytoplasm, cytosol. Lysosome. Secreted, exosome. Cytoplasmic vesicle, autophagosome. Secreted. The precursor is cytosolic. In response to inflammasome-activating signals, such as ATP for NLRP3 inflammasome or bacterial flagellin for NLRC4 inflammasome, cleaved and secreted. IL1B lacks any known signal sequence and the pathway(s) of its secretion is(are) not yet fully understood (PubMed:24201029). On the basis of experimental results, several unconventional secretion mechanisms have been proposed. 1. Secretion via secretory lysosomes: a fraction of CASP1 and IL1B precursor may be incorporated, by a yet undefined mechanism, into secretory lysosomes that undergo Ca(2+)-dependent exocytosis with release of mature IL1B (PubMed:15192144). 2. Secretory autophagy: IL1B-containing autophagosomes may fuse with endosomes or multivesicular bodies (MVBs) and then merge with the plasma membrane releasing soluble IL1B or IL1B-containing exosomes (PubMed:24201029). However, autophagy impacts IL1B production at several levels and its role in secretion is still controversial. 3. Secretion via exosomes: ATP-activation of P2RX7 leads to the formation of MVBs containing exosomes with entrapped IL1B, CASP1 and other inflammasome components. These MVBs undergo exocytosis with the release of exosomes. The release of soluble IL1B occurs after the lysis of exosome membranes (By similarity). 4. Secretion by microvesicle shedding: activation of the ATP receptor P2RX7 may induce an immediate shedding of membrane-derived microvesicles containing IL1B and possibly inflammasome components. The cytokine is then released in the extracellular compartment after microvesicle lysis (PubMed:11728343). 5. Release by translocation through permeabilized plasma membrane. This may occur in cells undergoing pyroptosis due to sustained activation of the inflammasome (By similarity). These mechanisms may not be not mutually exclusive.

Images



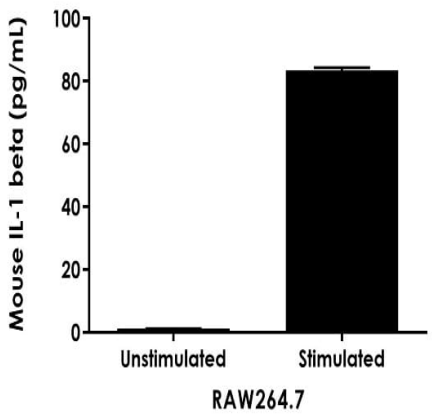
Other - Mouse IL-1 beta ELISA Kit, Fluorescent (ab229440)

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.



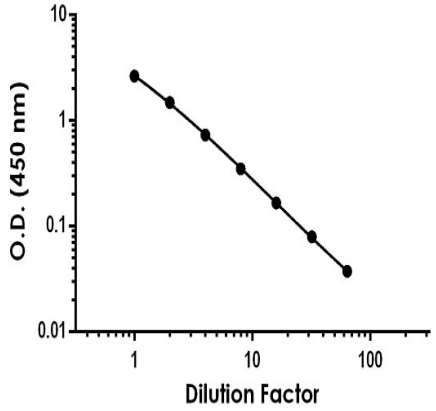
Example of mouse IL-1 beta (Interleukin-1 beta) standard curve in Sample Diluent NS.

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



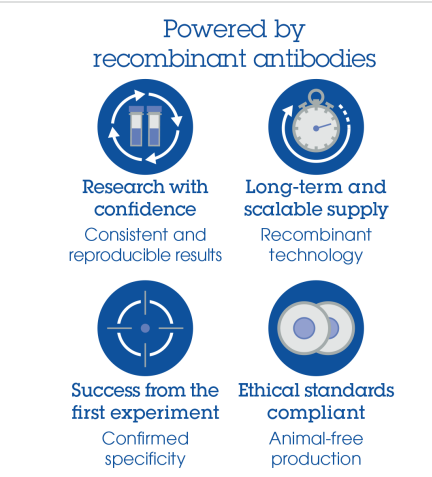
Comparison of secreted mouse IL-1 beta in unstimulated and LPS stimulated RAW264.7 cells.

RAW264.7 cells were grown in the absence (unstimulated) or presence of 5 µg/mL Lipopolysaccharide (LPS) (stimulated) for 48 hours. IL-1 beta was measured in 2-fold diluted cell culture supernatants of unstimulated and LPS stimulated RAW264.7 and cell culture media. Measured values were interpolated from the IL-1 beta Standard Curve diluted in Sample Diluent NS and corrected for dilution factor. Mean of duplicate values +/-SD are graphed: 1.1 pg/mL unstimulated, 83.5 pg/mL stimulated. There was no detectable signal in media.



Demonstration of the linearity of dilution.

Demonstration of the linearity of dilution by the titration of RAW264.7 stimulated for 48 hours with LPS undiluted to 32-fold dilution in Sample Diluent NS. Background-subtracted data values (mean +/- SD, n = 2) are graphed.



Sandwich ELISA - Mouse IL-1 beta ELISA Kit, Fluorescent (ab229440)

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

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