

Rat IL-1 beta ELISA Kit ab100768

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Overview

Product name Rat IL-1 beta ELISA Kit

Detection method Colorimetric

Precision

Intra-assay

Sample	n	Mean	SD	CV%
Overall				< 10%

Inter-assay

Sample	n	Mean	SD	CV%
Overall				< 12%

Sample type Cell culture extracts, Tissue Extracts

Assay type Sandwich (quantitative)

Sensitivity < 80 pg/ml

Range 68.59 pg/ml - 50000 pg/ml

Recovery 116 %

Sample specific recovery

Sample type	Average %	Range
Cell culture extracts	96.22	88% - 105%
Tissue Extracts	136.5	126% - 145%

Assay duration Multiple steps standard assay

Species reactivity **Reacts with:** Rat

Product overview Abcam's IL-1 beta Rat ELISA (Enzyme-Linked Immunosorbent Assay) Kit is an *in vitro* enzyme-linked immunosorbent assay for the quantitative measurement of rat IL-1 beta in cell lysates and tissue lysates.

This assay employs an antibody specific for rat IL-1 beta coated on a 96-well plate. Standards and samples are pipetted into the wells and IL-1 beta present in a sample is bound to the wells by

the immobilized antibody. The wells are washed and biotinylated anti-rat IL-1 beta antibody is added. After washing away unbound biotinylated antibody, HRP-conjugated streptavidin is pipetted to the wells. The wells are again washed, a TMB substrate solution is added to the wells and colour develops in proportion to the amount of IL-1 beta bound. The Stop Solution changes the colour from blue to yellow, and the intensity of the colour is measured at 450 nm.

Notes 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 Microplate

Properties

Storage instructions Store at -20°C. Please refer to protocols.

Components	1 x 96 tests
200X HRP-Streptavidin Concentrate	1 x 200µl
20X Wash Buffer	1 x 25ml
2X Cell Lysis Buffer	1 x 5ml
5X Assay Diluent	1 x 15ml
5X Sample Diluent Buffer	1 x 10ml
Biotinylated anti-rat IL-1 beta	2 vials
IL-1 beta Microplate (12 x 8 wells)	1 unit
Recombinant rat IL-1 beta Standard (lyophilized)	2 vials
Stop Solution	1 x 8ml
TMB One-Step Substrate Reagent	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).

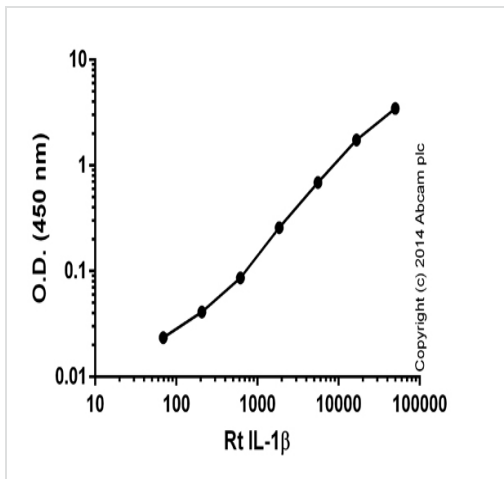
Sequence similarities Belongs to the IL-1 family.

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

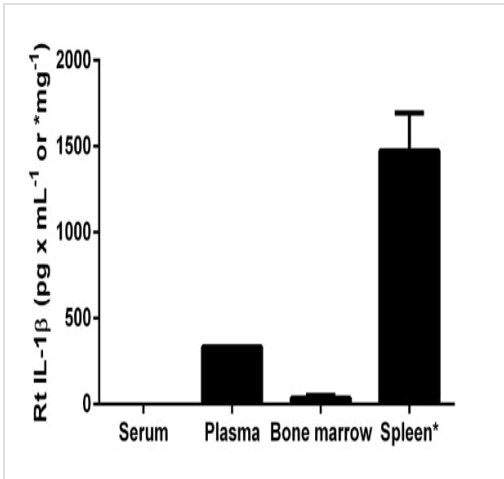
fully understood (PubMed:24201029). On the basis of experimental results, several unconventional secretion mechanisms have been proposed. 1. Secretion via secretory lysosomes: a fraction of CASP1 and IL1B precursor may be incorporated, by a yet undefined mechanism, into secretory lysosomes that undergo 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 mutually exclusive.

Images



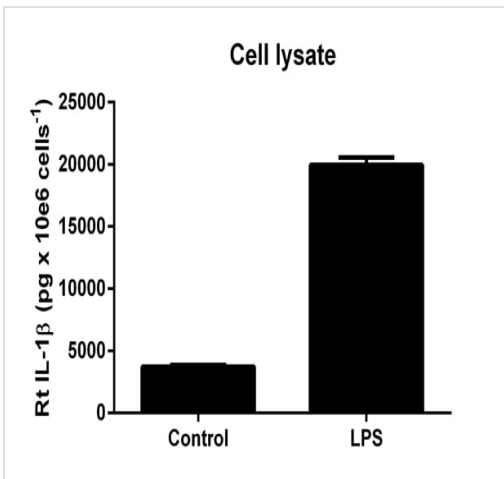
Standard curve of Rt IL-1 beta, with background signal subtracted (duplicates; +/- SD).

Sandwich ELISA - IL-1 beta Rat ELISA Kit
(ab100768)



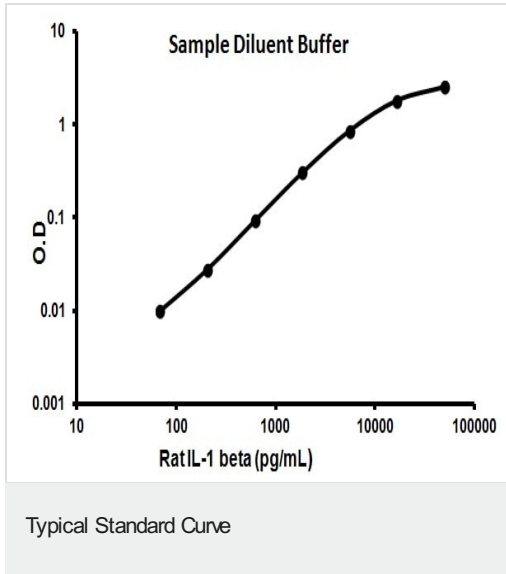
Rat IL-1b measured in biological fluids or in spleen lysate;
background signal subtracted (duplicates +/- SD).

Sandwich ELISA - IL-1 beta Rat ELISA Kit
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Rat IL-1b detected in cell lysates from NR8383.1 control cells (C) or
cells stimulated for 6 hours with 5 ug x mL⁻¹ of LPS (Sigma).
Results shown for IL-1? levels in 10e6 cells, after background signal
was subtracted (duplicates +/- SD).

Sandwich ELISA - IL-1 beta (Interleukin-1 beta) Rat
ELISA Kit (ab100768)



Representative standard curve using ab100768

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