abcam

Product datasheet

Mouse IL-1 beta ELISA Kit ab100705

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Overview

Product name	Mouse IL-1 beta ELISA Kit
Detection method	Colorimetric
Sample type	Cell culture extracts, Tissue Extracts
Assay type	Sandwich (quantitative)
Sensitivity	< 5 pg/ml
Range	2.74 pg/ml - 2000 pg/ml
Recovery	100 %

Sample specific recovery

Sample type	Average %	Range
Cell culture extracts	102.34	90% - 111%
Tissue Extracts	98.26	89% - 109%

Assay duration	Multiple steps standard assay
Species reactivity	**Reacts with:** Mouse
Product overview	Abcam's IL-1 beta Mouse ELISA (Enzyme-Linked Immunosorbent Assay) kit is an *in vitro* enzyme-linked immunosorbent assay for the quantitative measurement of mouse IL-1 beta in cell lysates and tissue lysates. This assay employs an antibody specific for mouse 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-mouse 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 color develops in proportion to the amount of IL-1 beta bound. The Stop Solution changes the color from blue to yellow, and the intensity of the color is measured at 450 nm. Get higher sensitivity in only 90 minutes with Mouse IL-1 beta ELISA Kit (**ab197742**) from our SimpleStep ELISA® range.

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-mouse IL-1 beta	2 vials
IL-1 beta Microplate (12 x 8 wells)	1 unit
Recombinant Mouse 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

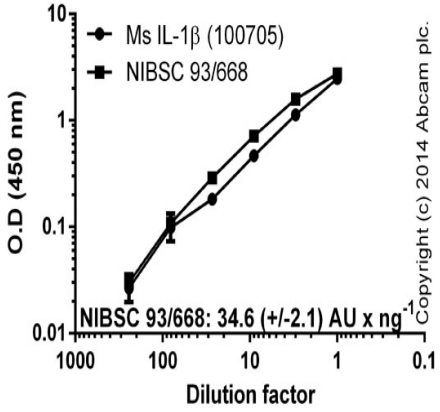
Activation of the IL1B precursor involves a CASP1-catalyzed proteolytic cleavage. Processing and secretion are temporarily associated.

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

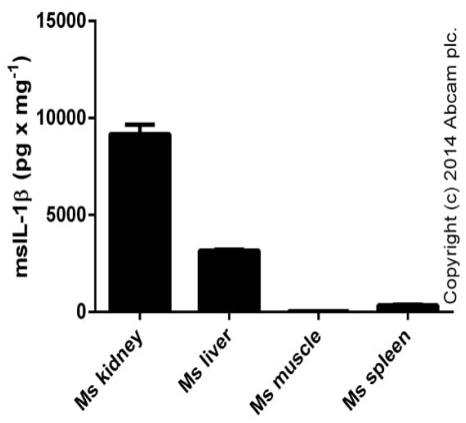
mature IL1B (PubMed:15192144). 2. Secretory autophagy: IL1B-containing autophagosomes may fuse with endosomes or multivesicular bodies (MVBs) and then merge with the plasma membrane releasing soluble IL1B or IL1B-containing exosomes (PubMed:24201029). However, autophagy impacts IL1B production at several 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 not mutually exclusive.

Images



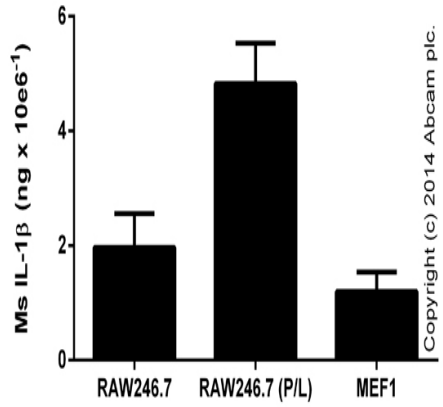
Dilution curves of mouse IL-1 beta (ab100705) and NIBSC standard (93/668). One ng of standard mouse IL-1 beta corresponds to 34.6 (+/-2.1) AU NIBSC 93/668. Background signal subtracted (duplicates; +/- SD).

ELISA: IL-1 beta Mouse ELISA Kit (ab100705)



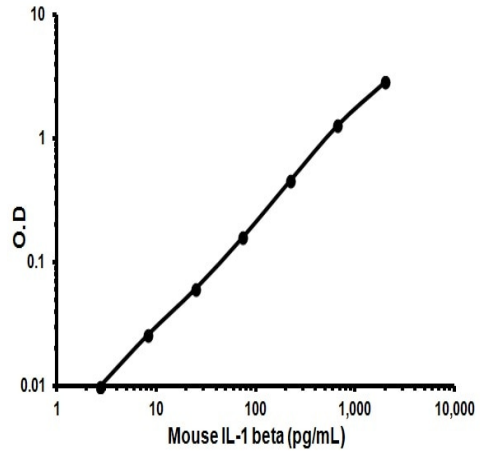
IL-1 beta measured in mouse tissue lysates (0.02-0.3 mg x mL^{-1} protein tested, data expressed per mg of extracted protein; duplicates +/- SD).

ELISA: IL-1 beta Mouse ELISA Kit (ab100705)



IL-1 beta measured in lysates from control cells, or cells stimulated for 24 hours with 50 ng x mL^{-1} of PMA (**ab120297**), with the addition of 1 ug x mL^{-1} of LPS (Sigma) (P/L) for the last 6 hours (duplicates +/- SD).

ELISA: IL-1 beta Mouse ELISA Kit (ab100705)



Representative standard curve using ab100705

Typical standard curve

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