abcam

Product datasheet

Anti-IL-1 beta antibody ab9722

21 Abreviews 559 References 3 Images

Overview

Product name	Anti-IL-1 beta antibody
Description	Rabbit polyclonal to IL-1 beta
Host species	Rabbit
Specificity	Anti-IL-1 beta antibody is expected to react with both the mature and pro form of IL-1 beta.
Tested applications	**Suitable for:** IHC-P, Sandwich ELISA, WB
Species reactivity	**Reacts with:** Human, Recombinant fragment
Immunogen	Full length protein aa 118-269. Full length mature protein minus the propeptide from aa 1-117 (Peptide available as ab9723). Database link: P10749
Positive control	IHC-P: Human adrenal tissue; Recombinant mouse IL-1 beta protein (ab9723) can be used as a positive control in WB
General notes	This product is no longer batch tested in IHC, for an IHC validated antibody please see ab156791 The Life Science industry has been in the grips of a reproducibility crisis for a number of years. Abcam is leading the way in addressing this with our range of recombinant monoclonal antibodies and knockout edited cell lines for gold-standard validation. Please check that this product meets your needs before purchasing. If you have any questions, special requirements or concerns, please send us an inquiry and/or contact our Support team ahead of purchase. Recommended alternatives for this product can be found below, along with publications, customer reviews and Q&As

Properties

Form	Lyophilized:Reconstitute with sterile water to 0.1-1.0mg/ml, aliquot and store at -20°C.
Storage instructions	Shipped at 4°C. Store at +4°C short term (1-2 weeks). Store at -20°C long term. Avoid freeze / thaw cycle.
Storage buffer	No preservative, sterile filtered
Purity	Immunogen affinity purified
Clonality	Polyclonal
Isotype	unknown
Light chain type	unknown

Applications

The Abpromise guarantee Our Abpromise guarantee covers the use of ab9722 in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Application	Abreviews	Notes
IHC-P	★★★★☆ (5)	Use a concentration of 2 µg/ml. Perform heat mediated antigen retrieval before commencing with IHC staining protocol.
Sandwich ELISA		Use a concentration of 0.5 - 2 µg/ml. To detect mIL-1b by direct ELISA (using 100µl/well antibody solution) a concentration of at least 0.5µg/ml of this antibody is required. This antigen affinity purified antibody, in conjunction with compatible secondary reagents, allows the detection of 0.2 - 0.4 ng/well of recombinant mIL-1b.
WB	★★★★☆ (6)	Use a concentration of 0.1 - 0.2 µg/ml. Predicted molecular weight: 30 kDa. Used in conjunction with compatible secondary reagents the detection limit for recombinant mIL-1β is 1.5-3.0 ng/lane, under either reducing or non-reducing conditions.

Target

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).

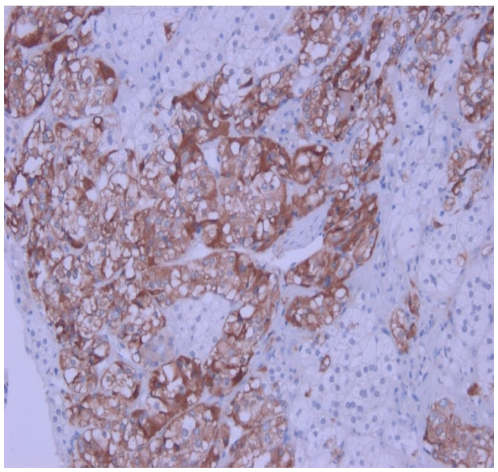
Sequence similarities Belongs to the IL-1 family.

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

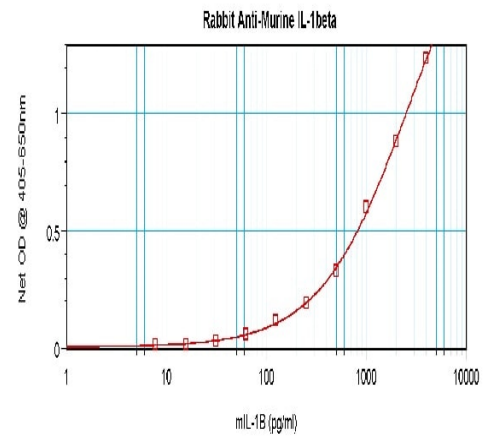
lysis of exosome membranes (By similarity). 4. Secretion by microvesicle shedding: activation of the ATP receptor P2RX7 may induce an immediate shedding of membrane-derived microvesicles containing IL1B and possibly inflammasome components. The cytokine is then released in the extracellular compartment 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



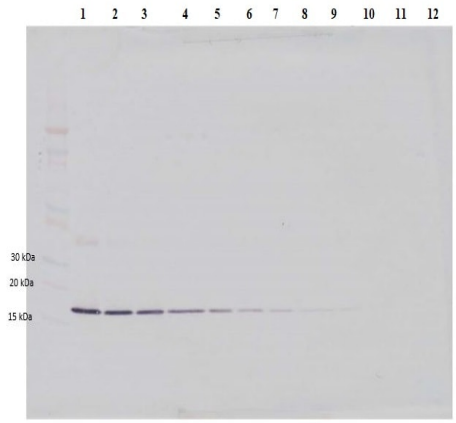
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-IL-1 beta antibody (ab9722)

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of human normal adrenal tissue labelling IL-1 beta with ab9722 at 2 µg/mL (45 minute incubation at room temperature). Heat mediated antigen retrieval was performed using a buffer at pH 6. An HRP-labeled polymer detection system was used with a DAB chromogen.



Sandwich ELISA - Anti-IL-1 beta antibody (ab9722)

Sandwich ELISA detecting IL-1 beta using ab9722 at a concentration of 2 µg/ml.



Western blot - Anti-IL-1 beta antibody (ab9722)

To detect mouse IL-1 beta by Western Blot analysis, ab9722 can be used at a concentration of 0.1-0.2 µg/ml. When used in conjunction with compatible development reagents, the detection limit for recombinant mouse IL-1 beta is 1.5-3.0 ng/lane, under either reducing or non-reducing conditions.

Lanes 1-11: 250, 125, 62.5, 31.25, 15.625, 7.8, 3.9, 1.95, 0.975, 0.4875 and 0.24 ng recombinant mouse IL-1 beta, respectively.

Non-reducing conditions.

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