abcam

Product datasheet

Anti-IL-1 beta antibody [EPR16805-15] ab234437

Recombinant RabMAb

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Overview

Product name	Anti-IL-1 beta antibody [EPR16805-15]
Description	Rabbit monoclonal [EPR16805-15] to IL-1 beta
Host species	Rabbit
Specificity	IL-1 beta is not present under homeostatic conditions; it is induced and secreted only upon inflammatory signals and its secretion is tightly controlled at the levels of transcription, mRNA stability, translation, post-translational modifications and processing (PMID: 26686225).
Tested applications	**Suitable for:** WB, Flow Cyt, IP **Unsuitable for:** ICC/IF or IHC-P
Species reactivity	**Reacts with:** Mouse
Immunogen	Recombinant fragment within Mouse IL-1 beta aa 100 to the C-terminus. The exact sequence is proprietary. Database link: P10749
Positive control	WB: RAW 264.7 treated with 100 ng/ml lipopolysaccharide (LPS) for 6 hours, then with 300 ng/ml Brefeldin A (BFA) added after 3 hours, whole cell lysate. IP: RAW 264.7 treated with 100 ng/ml LPS for 3h, then add 300 ng/ml Brefeldin A for 3h, whole cell lysate. Flow cyt: RAW 264.7 cells treated with 100 ng/ml LPS for 3h, then add 300 ng/ml Brefeldin A for 3h.
General notes	This product is a recombinant monoclonal antibody, which offers several advantages including: - High batch-to-batch consistency and reproducibility - Improved sensitivity and specificity - Long-term security of supply - Animal-free production For more information see here. Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents. Reproducibility is key to advancing scientific discovery and accelerating scientists' next breakthrough. Abcam is leading the way with our range of recombinant antibodies, knockout-validated antibodies and knockout cell lines, all of which support improved reproducibility. We are also planning to innovate the way in which we present recommended applications and species on our product datasheets, so that only applications & species that have been tested in our own labs, our suppliers or by selected trusted collaborators are covered by our Abpromise™

guarantee.

In preparation for this, we have started to update the applications & species that this product is Abpromise guaranteed for.

We are also updating the applications & species that this product has been "predicted to work with," however this information is not covered by our Abpromise guarantee.

Applications & species from publications and Abreviews that have not been tested in our own labs or in those of our suppliers are not covered by the Abpromise guarantee.

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, as well as customer reviews and Q&As.

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C long term. Avoid freeze / thaw cycle.
Storage buffer	pH: 7.2 Preservative: 0.01% Sodium azide Constituents: PBS, 0.05% BSA, 40% Glycerol (glycerin, glycerine)
Purity	Protein A purified
Clonality	Monoclonal
Clone number	EPR16805-15
Isotype	IgG

Applications

Our Abpromise guarantee covers the use of **ab234437** 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
WB	★★★☆☆	1/1000. Detects a band of approximately 31, 28, 17 kDa (predicted molecular weight: 30 kDa).
Flow Cyt		1/60.
IP		1/30.

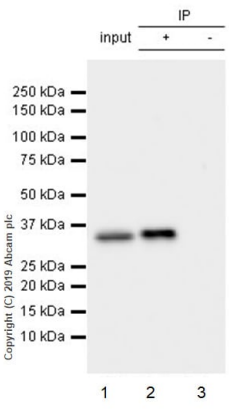
Application notes Is unsuitable for ICC/IF or IHC-P.

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



Immunoprecipitation - Anti-IL-1 beta antibody [EPR16805-15] (ab234437)

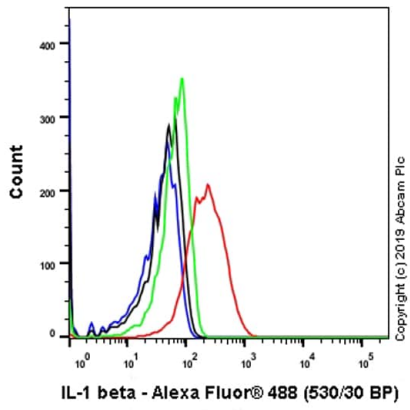
IL-1 beta was immunoprecipitated from 0.35 mg of RAW 264.7 (mouse macrophage cell line transformed with Abelson murine leukemia virus) (treated with 100 ng/ml LPS for 3h, then add 300 ng/ml Brefeldin A for 3h) whole cell lysate with ab234437 at 1/30 dilution. Western blot was performed from the immunoprecipitate using ab234437 at 1/1000 dilution. VeriBlot for IP Detection Reagent (HRP) (ab131366), was used as secondary antibody at 1/5000 dilution.

Lane 1: RAW 264.7 (treated with 100 ng/ml LPS for 3h, then add 300 ng/ml Brefeldin A for 3h) whole cell lysate 10 µg (Input).
Lane 2: ab234437 IP in RAW 264.7 (treated with 100 ng/ml LPS for 3h, then add 300 ng/ml Brefeldin A for 3h) whole cell lysate.
Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab234437 in RAW 264.7 (treated with 100 ng/ml LPS for 3h, then add 300 ng/ml Brefeldin A for 3h) whole cell lysate.

IL-1 beta is not present under homeostatic conditions; it is induced

and secreted only upon inflammatory signals and its secretion is tightly controlled at the levels of transcription, mRNA stability, translation, post-translational modifications and processing (PMID: 26686225).

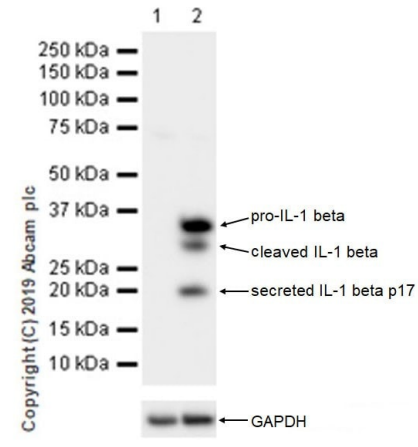
Blocking and dilution buffer and concentration: 5% NFDM/TBST.
Exposure time: 3 seconds.



Flow Cytometry - Anti-IL-1 beta antibody [EPR16805-15] (ab234437)

Flow cytometric analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized RAW 264.7 (mouse macrophage cell line transformed with Abelson murine leukemia virus) cells that were either treated (100 ng/ml LPS for 3h, then add 300 ng/ml Brefeldin A for 3h labeling)(red) or untreated (green) labeling IL-1 beta with ab234437 at 1/60 dilution compared with a rabbit monoclonal IgG Isotype control (ab172730) (black) and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (blue). Goat anti-Rabbit IgG (Alexa Fluor® 488, ab150077), at 1/2000 dilution was used as the secondary antibody.

IL-1 beta is not present under homeostatic conditions; it is induced and secreted only upon inflammatory signals and its secretion is tightly controlled at the levels of transcription, mRNA stability, translation, post-translational modifications and processing (PMID: 26686225).



Western blot - Anti-IL-1 beta antibody [EPR16805-15] (ab234437)

All lanes : Anti-IL-1 beta antibody [EPR16805-15] (ab234437) at 1/1000 dilution

Lane 1 : Untreated RAW 264.7 (mouse macrophage cell line transformed with Abelson murine leukemia virus) whole cell lysate
Lane 2 : RAW 264.7 (treated with 100 ng/ml lipopolysaccharide (LPS) for 6 hours, then with 300 ng/ml Brefeldin A (BFA) added after 3 hours) whole cell lysate

Lysates/proteins at 10 µg per lane.

Secondary
All lanes : Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

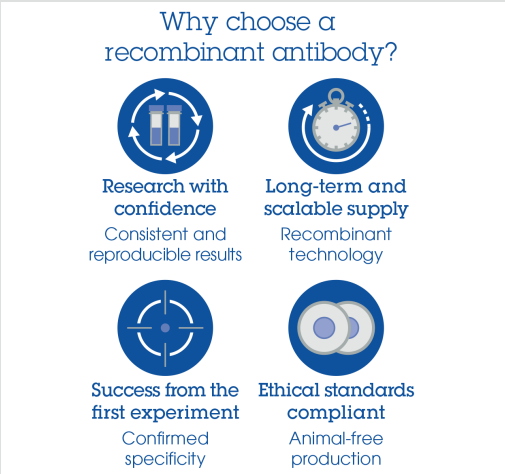
Predicted band size: 30 kDa
Observed band size: 17,28,31 kDa why is the actual band size different from the predicted?

Exposure time: 15 seconds

Blocking and dilution buffer: 5% NFDM/TBST.

The molecular weight observed is consistent with what has been described in the literature (PMID: 8446594).

IL-1 beta is not present under homeostatic conditions; it is induced and secreted only upon inflammatory signals and its secretion is tightly controlled at the levels of transcription, mRNA stability, translation, post-translational modifications and processing (PMID: 26686225).



Anti-IL-1 beta antibody [EPR16805-15] (ab234437)

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