abcam

Product datasheet

Anti-IL1 beta antibody (HRP) ab106015

Overview

Product name	Anti-IL1 beta antibody (HRP)
Description	Rabbit polyclonal to IL1 beta (HRP)
Host species	Rabbit
Conjugation	HRP
Specificity	This antibody recognises mature Human IL1B. It does not recognize Human IL1A. In ELISA formats and other immunoreactive assays, this antibody will recognize 10% of the non-denatured (native) precursor 31 kDa IL1B containing samples but will primarily detect all of the 17 kDa mature molecule. However, in immunoblot analysis of natural cell products or human body fluids, heating the sample in SDS with or without reducing agents will facilitate denaturing of the 31 kDa IL1B precursor molecule. Denatured 31 kDa precursor IL1B will be recognized by this antibody but often migrates as a 35 kDa band. In immunoblots, depending on the number of cells, the antibody detects the 17 kDa band in supernatants as well as a 35 kDa band representing the 31 kDa IL1B precursor in lysates.
Tested applications	**Suitable for:** IHC-Fr, WB, IP, ELISA, IHC-P, RIA, Neutralising, Flow Cyt
Species reactivity	**Reacts with:** Dog, Human, Non human primates
Immunogen	Recombinant Human IL1B produced in *E. coli*
Positive control	Peripheral blood mononuclear cells stimulated with LPS

Properties

Form	Lyophilised:Reconstitute with 0.1 mL of deionized water (or equivalent).
Storage instructions	Shipped at 4°C. Store at +4°C.
Storage buffer	pH: 7.20 Preservative: 0.01% Gentamicin sulphate Constituents: 0.42% Potassium phosphate, 0.88% Sodium chloride, 1% BSA BSA is immunoglobulin and protease free. The addition of sodium azide is not recommended.
Purity	DEAE-Chromatography
Clonality	Polyclonal
Isotype	IgG

Applications

Our Abpromise guarantee covers the use of **ab106015** 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-Fr		Use at an assay dependent concentration.
WB		1/1000 - 1/5000. Predicted molecular weight: 17 kDa.
IP		Use at an assay dependent dilution.
ELISA		1/10000 - 1/50000. This antibody is best used as the second antibody in combination with a monoclonal antibody as a capture antibody.
IHC-P		1/500 - 1/2500.
RIA		Use at an assay dependent dilution.
Neutralising		Use at an assay dependent dilution. It is recommended to incubate the sample with a dilution of the antibody for at least 4 hours.
Flow Cyt		Use at an assay dependent dilution. Caution should be exhibited as the F(c) domain of the antibody may interact with cells non-specifically.

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.

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