abcam

ab254360

Anti-IL-1 beta antibody [EPR23851-127]

Anti-IL-1 beta antibody [EPR23851-127] (ab254360) is a rabbit monoclonal antibody detecting IL-1 beta in **Western Blot, Flow Cytometry (Intra), ICC/IF**. Suitable for **Human, Mouse, Rat**.

- KO validated for confirmed specificity
- Biophysical QC for unrivalled batch-batch consistency
- Over 90 publications

Lab Essentials | Recombinant | RabMAb | KO Validated | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR23851-127
Purification technique	Affinity purification Protein A
Specificity	IL-1 beta is not present under homeostatic conditions, and it is induced and secreted only upon inflammatory signals. Stimulation may be required for the detection of IL-1β, as it is not constitutively expressed, no matter in precursor or mature form. For example, when using ab254360, positive signal can be detected in RAW264.7 with 100 ng/ml LPS treatment for 7h and additional 300 ng/ml Brefeldin A treatment in the last 3h. IL-1β is a secreted protein, it is recommended to treat cells with anti-secretion reagents (eg. Brefeldin A) that inhibit secretion. FURTHER INFORMATION ON SPECIFICITY (Chinese Version) available under the product protocols section. This file includes key technical notes of experience when using this product.
Concentration	0.522 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ICC/IF

Tested

Species	Mouse
Dilution info	1/50
Notes	-

Not recommended

Species	Rat, Human
Dilution info	-
Notes	-

IP

Not recommended

Species	Mouse, Human, Rat
Dilution info	-
Notes	-

WB

Tested

Species	Mouse
Dilution info	1/1000
Notes	-

Species	Rat
Dilution info	1/1000
Notes	-

Species	Human
Dilution info	1/1000
Notes	-

IHC-P

Not recommended

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Mouse
Dilution info	1/2500
Notes	-

Species	Human
Dilution info	1/2500
Notes	-

Species	Rat
Dilution info	1/2500
Notes	-

Target data

See full target information IL1B

Function Potent pro-inflammatory cytokine (PubMed:10653850, PubMed:12794819, PubMed:28331908, PubMed:3920526). 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 (PubMed:3920526). Promotes Th17 differentiation of T-cells. Synergizes with IL12/interleukin-12 to induce IFNG synthesis from T-helper 1 (Th1) cells

(PubMed:10653850). Plays a role in angiogenesis by inducing VEGF production synergistically with TNF and IL6 (PubMed:12794819). Involved in transduction of inflammation downstream of pyroptosis: its mature form is specifically released in the extracellular milieu by passing through the gasdermin-D (GSDMD) pore (PubMed:33377178, PubMed:33883744). Acts as a sensor of S.pyogenes infection in skin: cleaved and activated by pyogenes SpeB protease, leading to an inflammatory response that prevents bacterial growth during invasive skin infection (PubMed:28331908).

Storage

Shipped at conditions	Conditional Ambient
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Notes

Anti-IL-1 beta antibody [EPR23851-127] (ab254360) was developed by Abcam using patented rabbit monoclonal antibody technology and is validated for use in Flow Cyt (Intra), ICC/IF and WB.

Anti-IL-1 beta antibody [EPR23851-127] (ab254360) was first used in a scientific publication in 2021 and has been cited over 96 times in peer reviewed journals. It's performance in Western blot in human, mouse and rat samples is trusted by the scientific community.

Abcam's high quality manufacturing and validation processes ensure Anti-IL-1 beta antibody [EPR23851-127] (ab254360) has high sensitivity and specificity alongside high lot-to-lot consistency and reproducibility.

The specificity of Anti-IL-1 beta antibody [EPR23851-127] (ab254360) has been confirmed by ICC/IF testing in IL-1 beta knockout THP-1 cells (ab273762).

Anti-IL-1 beta antibody [EPR23851-127] (ab254360) specifically detects IL-1 beta (UniProt ID: P10749; Molecular weight: 18kDa) and is sold in a convenient trial size to enable initial testing (20 µL) and larger sizes for subsequent scaling up experiments (100 µL and 1 mL).

Conjugation-ready, carrier free format available for antibody clone EPR23851-127 - ab282021.

Antibody clone EPR23851-127 is also available pre-conjugated to a variety of labels for your convenience - Alexa Fluor® 488, Alexa Fluor® 647 (ab317662, ab319085).

Interleukin-1 beta (IL-1β) is a key biomarker in inflammatory bowel disease (IBD).

Patented technology
Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

What are the advantages of a recombinant monoclonal antibody?
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 batch production

For more information, read more on recombinant antibodies.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

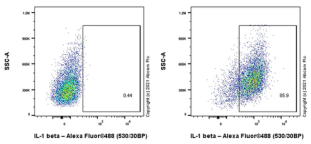
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

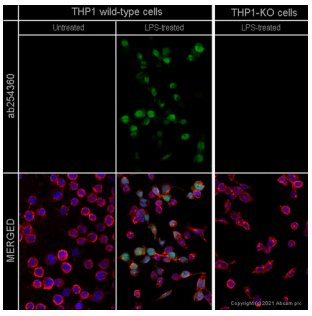
8 product images



Flow Cytometry (Intracellular) - Anti-IL-1 beta antibody [EPR23851-127] (ab254360)

IL-1 beta Flow Cytometry (Intracellular) staining using rabbit Anti-IL-1 beta antibody

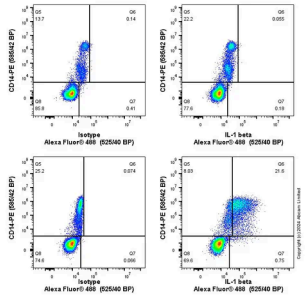
Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized THP-1(Human monocytic leukemia monocyte) treated with 80nM TPA for 16 hours, then 100ng/ml LPS for 3 hours and 300ng/ml BFA for another 3 hours (Right)/ Untreated control (Left) cells labelling IL-1 beta with ab254360 at 1/500 dilution (0.1ug). A Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) at 1/2000 dilution was used as the secondary antibody.



Immunocytochemistry/ Immunofluorescence - Anti-IL-1 beta antibody [EPR23851-127] (ab254360)

IL-1 beta Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-IL-1 beta antibody

ab254360 staining IL-1 beta in wild-type THP-1 cells and IL1B knockout THP-1 cells (ab273762) +/- TPA (80nM overnight) and LPS (100ng/ml, 6h). The cells were fixed with 4% paraformaldehyde (10 min) then permeabilized with 0.1% Triton X-100 for 5 minutes and then blocked with 1% BSA/10% normal goat serum/0.3M glycine in 0.1% PBS-Tween for 1h. The cells were then incubated with ab254360 at 0.4µg/ml concentration and ab7291 (Mouse monoclonal to alpha Tubulin) at 1/1000 dilution overnight at 4°C followed by a further incubation at room temperature for 1h with a goat secondary antibody to rabbit IgG (Alexa Fluor® 488) (ab150081) at 2 µg/ml (shown in green) and a goat secondary antibody to mouse IgG (Alexa Fluor® 594) (ab150120) at 2 µg/ml (shown in red). Nuclear DNA was labelled in blue with DAPI.
Image was taken with a confocal microscope (Leica-Microsystems TCS SP8).



Flow Cytometry (Intracellular) - Anti-IL-1 beta antibody [EPR23851-127] (ab254360)

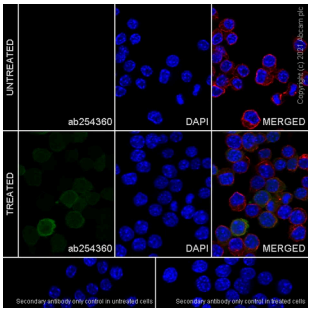
IL-1 beta Flow Cytometry (Intracellular) staining of PBMC using rabbit Anti-IL-1 beta antibody

Flow cytometry staining of human peripheral blood mononuclear cells (PBMCs) (top) or PBMCs treated with 1µg/mL LPS and 1µg/mL BrefeldinA for 18 Hours (bottom), with ab254360 (right) or Recombinant Rabbit IgG, monoclonal [EPR25A] - Isotype Control (left).

PBMCs were incubated for 30 min on ice in 1x PBS containing 10 µg/ml human IgG and 10 % normal goat serum to block FC receptors and non-specific protein-protein interactions. Cells were fixed and permeabilised with BD Cytofix/Cytoperm™ for 20 min, followed by addition of the antibody ab254360 or Recombinant Rabbit IgG, monoclonal [EPR25A] - Isotype Control (1x 10^6 in 100 µl at 0.2 µg/ml (1/2,500)) for 30 min at 22°C .

The secondary antibody Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed was incubated at 1/4000 for 30min at 22°C

Acquisition of >30000 events were collected using a 50 mW Blue laser (488nm) and 525/40 bandpass filter. Events were gated on live cells.

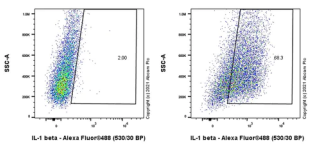


Immunocytochemistry/ Immunofluorescence - Anti-IL-1 beta antibody [EPR23851-127] (ab254360)

IL-1 beta Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-IL-1 beta antibody

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized RAW 264.7 cells labelling IL-1 beta with ab254360 at 1/50 (10.28 µg/ml) dilution, followed by ab150077 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) antibody at 1/1000 dilution (Green) Confocal image showing increased cytoplasmic and nuclear staining in RAW 264.7 cells treated with Lipopolysaccharide (100 ng/ml) for 4 h then together with Brefeldin A (1 µg/ml) for another 3 h is observed.
ab195889 Anti-alpha Tubulin mouse monoclonal antibody - Microtubule Marker (Alexa Fluor® 594) was used to counterstain tubulin at 1/200 dilution (Red). The Nuclear counterstain was DAPI (Blue).

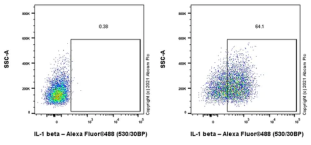
Secondary antibody only control: Secondary antibody is ab150077 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) at 1/1000 dilution.



Flow Cytometry (Intracellular) - Anti-IL-1 beta antibody [EPR23851-127] (ab254360)

IL-1 beta Flow Cytometry (Intracellular) staining using rabbit Anti-IL-1 beta antibody

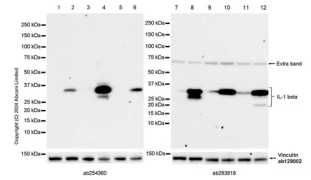
Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized NR8383 (rat lung macrophage (alveolar)) treated with 100ng/ml LPS for 4 hours and 1ug/ml BFA for another 3 hours (Right)/ Untreated control (Left) cells labelling IL-1 beta with ab254360 at 1/50 dilution (1ug)/ Right and Left. A Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) at 1/2000 dilution was used as the secondary antibody.



Flow Cytometry (Intracellular) - Anti-IL-1 beta antibody [EPR23851-127] (ab254360)

IL-1 beta Flow Cytometry (Intracellular) staining using rabbit Anti-IL-1 beta antibody

Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized RAW 264.7 (Mouse Abelson murine leukemia virus-induced tumor macrophage) treated with 100ng/ml LPS for 4 hours and 1ug/ml BFA for another 3 hours (Right)/ Untreated control (Left) cells labelling IL-1 beta with ab254360 at 1/500 dilution (0.1ug). A Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) at 1/2000 dilution was used as the secondary antibody.



Western blot - Anti-IL-1 beta antibody [EPR23851-127] (ab254360)

IL-1 beta Western blot staining using rabbit Anti-IL-1 beta antibody

Expression of IL-1 beta is induced by LPS treatment. 31-kDa precursor IL-1 beta, 28- and 17.5-kDa proteolytically cleaved IL-1 beta are observed. The expression pattern and molecular weight observed is consistent with what has been described in the literature (PMID: 8446594, 19559631).

Compared with ab254360, ab283818 has higher affinity. For better using ab254360, we recommend loading higher amount of human/rat lysate or using lower antibody dilution.

Lanes 1 - 6:
Western blot - Anti-IL-1 beta antibody [EPR23851-127] (ab254360) at 1/1000 dilution

Lanes 7 - 12:
Western blot - Anti-IL-1 beta antibody [RM1009] (ab283818)

Lanes 1 and 7:
Untreated THP-1 (human monocytic leukemia monocyte) whole cell lysate at 20 µg

Lanes 2 and 8:
THP-1 treated with 100ng/ml lipopolysaccharide (LPS) for 3h whole cell lysate at 20 µg

Lanes 3 and 9:
Untreated RAW 264.7 (mouse abelson murine leukemia virus-induced tumor macrophage) whole cell lysate at 20 µg

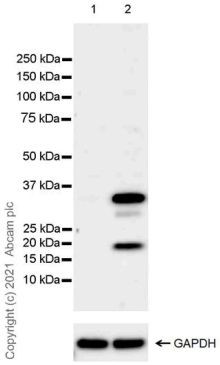
Lanes 4 and 10:
RAW 264.7 treated with 100 ng/ml LPS and 300 ng/ml Brefeldin A (ab193369) for 4 hours, whole cell lysate at 20 µg

Lanes 5 and 11:
Untreated NR8383 (rat lung macrophage (alveolar)) whole cell lysate at 20 µg

Lanes 6 and 12:
NR8383 treated with 100 ng/ml LPS for 7 hours and 1 µg/ml Brefeldin A (ab193369) for the last 3 hours, whole cell lysate at 20 µg

Observed band size: 17.5 kDa, 28 kDa, 31 kDa

Exposure time: 102s



Western blot - Anti-IL-1 beta antibody [EPR23851-127] (ab254360)

IL-1 beta Western blot staining using rabbit Anti-IL-1 beta antibody

Blocking and diluting buffer and concentration: 3% NFDM/TBST
Nitrocellulose membrane was used in this blot.

Exposure time: 70 seconds

All lanes:
Western blot - Anti-IL-1 beta antibody [EPR23851-127] (ab254360) at 1/1000 dilution

Lane 1:
Untreated NR8383 (rat lung macrophage (alveolar)) whole cell lysate at 20 µg

Lane 2:
NR8383 treated with 100 ng/ml LPS for 7 hours and 300 ng/ml Brefeldin A (ab193369) for the last 3 hours, whole cell lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/50000 dilution

Predicted band size: 30 kDa

Observed band size: 17.5 kDa, 28 kDa, 31 kDa

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.