abcam

ab263956

Anti-CD8 beta antibody [EPR22331-81] - BSA and Azide free

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	EPR22331-81
Purification technique	Affinity purification Protein A
Concentration	1.026 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Tested

Species	Mouse
Dilution info	-

Notes	-

Flow Cyt

Tested

Species	Mouse
Dilution info	-
Notes	-

WB

Tested

Species	Mouse
Dilution info	-
Notes	-

IHC-P

Not recommended

Species	Mouse
Dilution info	-
Notes	-

IHC-Fr

Tested

Species	Mouse
Dilution info	-
Notes	Heat mediated antigen retrieval using sodium citrate buffer (10mM citrate pH 6.0 + 0.05% Tween-20).

Target data

See full target information Cd8b

Function	Integral membrane glycoprotein that plays an essential role in the immune response and serves multiple functions in responses against both external and internal offenses. In T-cells, functions primarily as a coreceptor for MHC class I molecule:peptide complex. The antigens presented by class I peptides are derived from cytosolic proteins while class II derived from extracellular proteins. Interacts simultaneously with the T-cell receptor (TCR) and the MHC class I proteins presented by antigen presenting cells (APCs). In turn, recruits the Src kinase LCK to the vicinity of the TCR-CD3 complex. A palmitoylation site in the cytoplasmic tail of CD8B chain contributes to partitioning of CD8 into the plasma membrane lipid rafts where signaling proteins are enriched. Once LCK recruited, it initiates different intracellular signaling pathways by phosphorylating various substrates ultimately leading to lymphokine production, motility, adhesion and activation of cytotoxic T-lymphocytes (CTLs). Additionally, plays a critical role in thymic selection of CD8+ T-cells.

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C
Storage information	Do Not Freeze

Notes

ab263956 is the carrier-free version of ab263946.

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.

Conjugation ready

Our carrier-free antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. This conjugation-ready format is designed for use with fluorochromes, metal isotopes, oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications.

Use our conjugation kits for antibody conjugates that are ready-to-use in as little as 20 minutes with 1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold.

Compatibility
This product is compatible with the Maxpar® Antibody Labeling Kit from Fluidigm, without the need for antibody preparation. Maxpar® is a trademark of Fluidigm Canada Inc.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	The target CD8 beta also known as CD8b or CD8B is a protein component of the CD8 coreceptor that is primarily expressed on the surface of cytotoxic T lymphocytes and a subset of natural killer cells. The CD8 beta molecule pairs with CD8 alpha to form a heterodimer that plays an essential role in the immune response. The molecular weight of CD8 beta is approximately 34 kDa. It is located primarily in the plasma membrane where it interacts with major histocompatibility complex (MHC) class I molecules.
Biological function summary	The CD8 beta protein works as part of the CD8 coreceptor complex which enhances the interaction between T cell receptors (TCRs) and antigens presented by MHC class I on infected or malignant cells. This interaction strengthens the activation signal received by T cells. The CD8 complex including CD8 beta contributes to the recognition and elimination of cells presenting foreign antigens which is essential for the adaptive immune response.
Pathways	The CD8 beta protein participates in pathways related to antigen recognition and T cell receptor signaling. The protein together with CD8 alpha facilitates signal transduction following TCR engagement. This action is vital for the activation of cytotoxic T cells enabling immune responses. CD8 beta associates with the Lck kinase another vital player in the TCR signaling pathway through its cytoplasmic tail. In this pathway the presence of CD8 beta helps maintain and modulate effective immune responses.
Associated diseases and disorders	CD8 beta plays a significant role in conditions like viral infections and autoimmune diseases. In viral infections the presence of the CD8 complex containing CD8 beta aids in the destruction of virus-infected cells. In autoimmune diseases abnormal CD8 T cell responses can result in self-tissue damage reflecting dysregulation in its normal function. CD8 beta therefore proves critical in these contexts contributing to disease dynamics by interacting with proteins like MHC class I and Lck kinase during improper immune responses.

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.

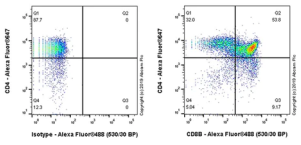
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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.

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5 product images

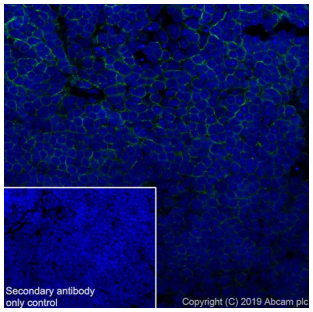


Flow Cytometry - Anti-CD8 beta antibody [EPR22331-81] - BSA and Azide free (ab263956)

CD8 beta Flow Cytometry staining using rabbit Anti-CD8 beta antibody

Flow Cytometric analysis of mouse thymocytes using ab263946 at a 1/500 dilution. Cells were stained with Rabbit monoclonal IgG (ab172730) (Left) or ab263946 (Right). Then stained with anti-CD4 conjugated to Alexa Fluor® 647. Secondary used is Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) at a 1/2000 dilution.
Gated on viable cells.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab263946).



Immunohistochemistry (Frozen sections) - Anti-CD8 beta antibody [EPR22331-81] - BSA and Azide free (ab263956)

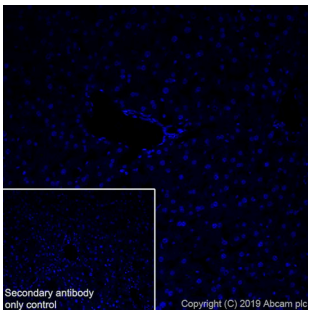
CD8 beta Immunohistochemistry (Frozen sections) staining of Mouse thymus tissue using rabbit Anti-CD8 beta antibody

Immunohistochemical analysis of 4% PFA fixed 0.2% Triton X-100 permeabilized frozen mouse thymus tissue labeling CD8 beta with ab263946 at 1/100 (5.13 µg/ml) dilution followed by ab150077 Alexa Fluor® 488 Goat anti-Rabbit secondary at 1/1000 (2 µg/ml) dilution. The nuclear counterstain was DAPI (Blue). Positive staining on T cells of mouse thymus (PMID: 12702501) is observed.

Heat mediated antigen retrieval using sodium citrate buffer (10mM citrate pH 6.0 + 0.05% Tween-20).

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody was ab150077 Alexa Fluor® 488 Goat anti-Rabbit secondary at 1/1000 (2 µg/ml) dilution.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab263946).



Immunohistochemistry (Frozen sections) - Anti-CD8 beta antibody [EPR22331-81] - BSA and Azide free (ab263956)

CD8 beta Immunohistochemistry (Frozen sections) staining of Mouse liver tissue using rabbit Anti-CD8 beta antibody

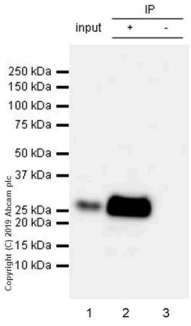
Immunohistochemical analysis of 4% PFA fixed 0.2% Triton X-100 permeabilized frozen mouse liver tissue labeling CD8 beta with ab263946 at 1/100 (5.13 µg/ml) dilution followed by ab150077 Alexa Fluor® 488 Goat anti-Rabbit secondary at 1/1000 (2 µg/ml) dilution. The nuclear counterstain was DAPI (Blue). Negative staining on mouse liver.

Negative control: liver (PMID: 3145195).

Heat mediated antigen retrieval using sodium citrate buffer (10mM citrate pH 6.0 + 0.05% Tween-20).

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody was ab150077 Alexa Fluor® 488 Goat anti-Rabbit secondary at 1/1000 (2 µg/ml) dilution.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab263946).



Immunoprecipitation - Anti-CD8 beta antibody [EPR22331-81] - BSA and Azide free (ab263956)

CD8 beta was immunoprecipitated from 0.35 mg mouse thymus lysate 10µg with ab263946 at 1/30 dilution (2µg in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab263946 at 1/1000 dilution. VeriBlot for IP Detection Reagent (HRP) (ab131366) was used at 1/5000 dilution.
Lane 1: Mouse thymus lysate 10µg
Lane 2: ab263946 IP in mouse thymus lysate
Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab263946 in mouse thymus lysate

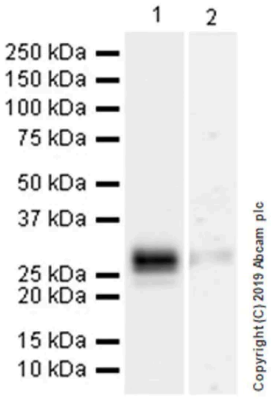
Blocking and dilution buffer and concentration: 5% NFDM/TBST.

Exposure time: 10 seconds.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab263946).

All lanes:
Immunoprecipitation - Anti-CD8 beta antibody [EPR22331-81] (ab263946)

Predicted band size: 24 kDa



Western blot - Anti-CD8 beta antibody [EPR22331-81] - BSA and Azide free (ab263956)

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab263946).**Blocking and diluting buffer and concentration:** 5% NFDM/TBST.
CD8 beta is a glycoprotein. The molecular weight observed is consistent with what has been described in the literature (PMID: 11719190).

Exposure time:
Lane 1: 3 secs.
Lane 2: 3 mins.

All lanes:
Western blot - Anti-CD8 beta antibody [EPR22331-81] (ab263946) at 1/1000 dilution

Lane 1:
Mouse thymus lysate at 20 µg

Lane 2:
Mouse lymph node lysate at 20 µg

Secondary

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

Predicted band size: 24 kDa

Observed band size: 28-32 kDa

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