abcam

ab230156

Anti-CD8 alpha antibody [EPR21769] - BSA and Azide free

Anti-CD8 alpha antibody [EPR21769] - BSA and Azide free (ab230156) is a rabbit recombinant monoclonal antibody provided in a PBS only buffer for easy conjugation detecting CD8 alpha in **Western Blot, Flow Cytometry, IP, IHC-P, IHC-Fr**. Suitable for **Mouse**.

- BSA, sodium azide, and glycerol-free for easy conjugation
- Biophysical QC for unrivalled batch-batch consistency

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	EPR21769
Purification technique	Affinity purification Protein A
Concentration	1.021 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

Expected

Species	Mouse
Dilution info	Use at an assay dependent concentration.
Notes	-

IHC-Fr

Tested

Species	Mouse
Dilution info	-
Notes	-

IHC-P

Tested

Species	Mouse
Dilution info	-
Notes	Background staining was observed in mouse testis samples.

Target data

See full target information Cd8a

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. LCK then initiates different intracellular signaling pathways by phosphorylating various substrates ultimately leading to lymphokine production, motility, adhesion and activation of cytotoxic T-lymphocytes (CTLs). This mechanism enables CTLs to recognize and eliminate infected cells and tumor cells. In NK-cells, the presence of CD8A homodimers at the cell surface provides a survival mechanism allowing conjugation and lysis of multiple target cells. CD8A homodimer molecules also promote the survival and differentiation of activated lymphocytes into memory 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

What is this antibody validated in?
Anti-CD8 alpha antibody [EPR21769] - BSA and Azide free (ab230156) is a rabbit recombinant monoclonal antibody and is validated for use in Western Blot (WB), Flow Cytometry (Flow Cyt), Immunoprecipitation (IP), Immunohistochemistry (IHC-P), Immunohistochemistry (IHC-Fr) in Mouse samples.

What is the molecular weight of CD8 alpha?
Anti-CD8 alpha [EPR21769] - BSA and Azide free (ab230156) specifically detects a band for CD8 alpha (UniProt: P01731) at a molecular weight of 27kDa.

Other related products
We have a range of other formats of antibody clone [EPR21769] also available for your convenience: ab217344, Carrier free - ab230156, FITC - ab237367, APC - ab237368, Alexa Fluor® 594 - ab277939, Alexa Fluor® 555 - ab280863

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	CD8 alpha also known as CD8A or CD8 protein is a glycoprotein subunit expressed on the surface of cytotoxic T lymphocytes. It has a mass of approximately 32 kDa. Found on the surface cell membrane CD8 alpha functions primarily in the immune response specifically in the recognition of antigens bound to major histocompatibility complex (MHC) class I molecules. Often scientists use CD8 antibodies for detection and CD8 IHC or immunohistochemistry for localization studies.
Biological function summary	The CD8 alpha protein plays a critical role in T-cell mediated immune responses. It forms a heterodimer with the CD8 beta chain creating the CD8 alpha-beta complex that strengthens T-cell interaction with antigen-presenting cells. CD8 alpha also helps in signaling processes that activate T cells equipping them to destroy infected or malignant cells. Researchers often study CD8 alpha peptides to understand its interactions better.
Pathways	CD8 alpha is integral to the T-cell receptor signaling pathway and the cytotoxic T lymphocyte (CTL) pathway. The T-cell receptor complex which includes the CD8 molecule transmits signals that are important for T-cell activation and function. CD8 interacts with key proteins such as the T-cell receptor (TCR) and MHC class I molecules facilitating targeted responses against pathogens. These pathways highlight CD8 alpha's role in adaptive immunity.

Associated diseases and disorders	CD8 alpha is most prominently associated with viral infections and cancer. Conditions like HIV and some forms of leukemia show altered CD8 function highlighting the protein's role in immune surveillance. In HIV infection for instance CD8 T cells reduce in number impairing the immune response. CD8 alpha's connection to the immune system places it alongside other immune proteins such as CD4 and MHC molecules in the context of immune dysfunction.

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

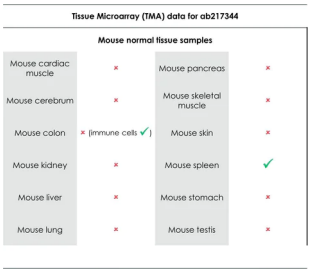
We do not recommend this combination. It is not covered by our product promise.

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.

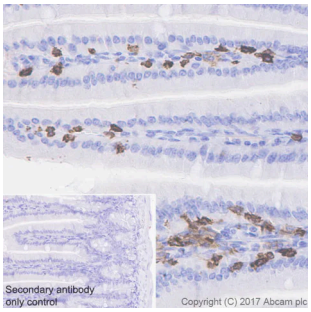
Full details and terms and conditions can be found here:
Terms & Conditions.

8 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CD8 alpha antibody [EPR21769] - BSA and Azide free (ab230156)

Tissue Microarrays stained for "Anti-CD8 alpha antibody [EPR21769]" using "ab217344"in immunohistochemical analysis. This table provides a detailed overview of positive (tick mark) and negative (cross mark) staining per sample type tested. The sections were pre-treated using Heat mediated antigen retrieval using ab93684 (Tris/EDTA buffer, pH 9.0). The sections were incubated with ab217344 at +4°C overnight followed by a ready to use Goat Anti-Rabbit IgG H&L (HRP polymer).



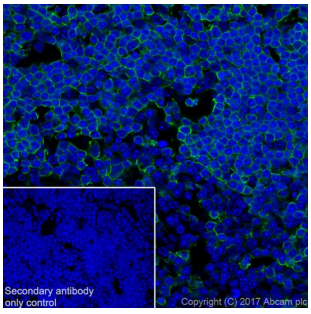
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CD8 alpha antibody [EPR21769] - BSA and Azide free (ab230156)

CD8 alpha Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-CD8 alpha antibody

Immunohistochemical analysis of paraffin-embedded mouse colon tissue labeling CD8 alpha with ab217344 at 1/2000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) Ready to use. Positive staining on stromal cells of mouse colon. Counter stained with Hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) Ready to use.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab217344).

Heat mediated antigen retrieval was performed with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



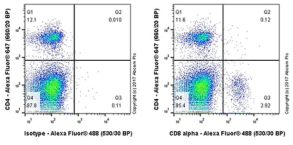
Immunohistochemistry (Frozen sections) - Anti-CD8 alpha antibody [EPR21769] - BSA and Azide free (ab230156)

CD8 alpha Immunohistochemistry (Frozen sections) staining using rabbit Anti-CD8 alpha antibody

Immunohistochemical analysis of 4% paraformaldehyde-fixed, 0.2% Triton X-100 permeabilized frozen mouse thymus tissue labeling CD8 alpha with ab217344 at 1/500 dilution, followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green). Positive membrane staining on mouse thymus tissue section (PMID: 25616911).
The nuclear counter stain is DAPI (blue).

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) at 1/1000 dilution.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab217344).

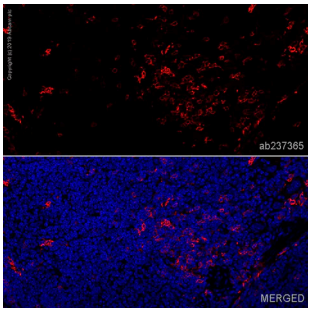


Flow Cytometry - Anti-CD8 alpha antibody [EPR21769] - BSA and Azide free (ab230156)

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

Flow cytometric analysis of mouse primary splenocytes labeling CD8 alpha with ab217344 at 1/500 dilution (right panel) compared with a Rabbit IgG, monoclonal [EPR25A] - Isotype Control (ab172730) (left panel). Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) at 1/2000 dilution was used as the secondary antibody.
Cells were surface stained with CD4-Alexa Fluor® 647, then stained with rabbit IgG (Left) / ab217344 (Right) separately. CD4 and CD8 alpha are mutually exclusive expressed in mouse spleen. Gated on total viable cells.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab217344).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CD8 alpha antibody [EPR21769] - BSA and Azide free (ab230156)

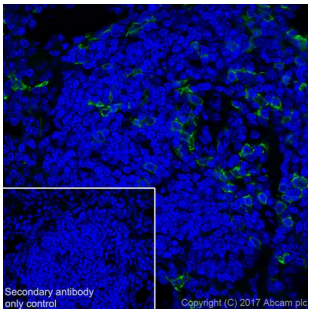
CD8 alpha Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-CD8 alpha antibody

Clone EPR21769 (ab230156) has been successfully conjugated by Abcam. This image was generated using Anti-CD8 alpha antibody [EPR21769] (Alexa Fluor® 647). Please refer to ab237365 for protocol details.
IHC image of CD8 alpha staining in a section of formalin-fixed paraffin-embedded normal mouse spleen.

The section was pre-treated using heat mediated antigen retrieval with Tris/EDTA buffer (pH9, epitope retrieval solution 2) for 20mins, performed on a Leica BOND™. Non-specific protein-protein interactions were then blocked in TBS containing 0.025% (v/v) Triton X-100, 0.3M (w/v) glycine and 1% (w/v) BSA for 1h at room temperature. The section was then incubated overnight at +4°C in TBS containing 0.025% (v/v) Triton X-100 and 1% (w/v) BSA with ab237365 at 1/100 dilution (shown in red). Nuclear DNA was labeled with DAPI (shown in blue). The section was then mounted using Fluoromount®.

Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).

For other IHC staining systems (automated and non-automated), customers should optimize variable parameters such as antigen retrieval conditions, antibody concentrations and incubation times.



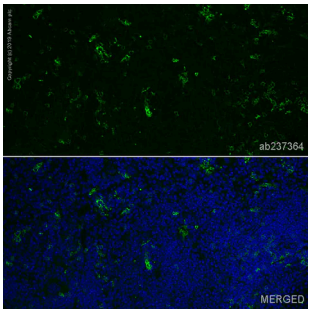
Immunohistochemistry (Frozen sections) - Anti-CD8 alpha antibody [EPR21769] - BSA and Azide free (ab230156)

CD8 alpha Immunohistochemistry (Frozen sections) staining using rabbit Anti-CD8 alpha antibody

Immunohistochemical analysis of 4% paraformaldehyde-fixed, 0.2% Triton X-100 permeabilized frozen mouse spleen tissue labeling CD8 alpha with ab217344 at 1/500 dilution, followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green). Positive membrane staining on mouse spleen (PMID: 25616911).
The nuclear counter stain is DAPI (blue).

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) at 1/1000 dilution.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab217344).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CD8 alpha antibody [EPR21769] - BSA and Azide free (ab230156)

CD8 alpha Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-CD8 alpha antibody

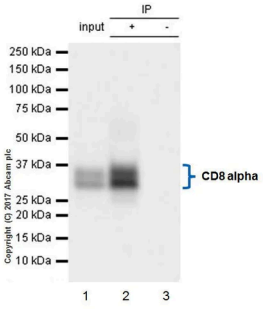
Clone EPR21769 (ab230156) has been successfully conjugated by Abcam. This image was generated using Anti-CD8 alpha antibody [EPR21769] (Alexa Fluor® 488). Please refer to ab237364 for protocol details.

IHC image of CD8 alpha staining in a section of formalin-fixed paraffin-embedded normal mouse spleen.

The section was pre-treated using heat mediated antigen retrieval with Tris/EDTA buffer (pH9, epitope retrieval solution 2) for 20mins, performed on a Leica BOND™. Non-specific protein-protein interactions were then blocked in TBS containing 0.025% (v/v) Triton X-100, 0.3M (w/v) glycine and 1% (w/v) BSA for 1h at room temperature. The section was then incubated overnight at +4°C in TBS containing 0.025% (v/v) Triton X-100 and 1% (w/v) BSA with ab237364 at 1/100 dilution (shown in green). Nuclear DNA was labeled with DAPI (shown in blue). The section was then mounted using Fluoromount®.

Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).

For other IHC staining systems (automated and non-automated), customers should optimize variable parameters such as antigen retrieval conditions, antibody concentrations and incubation times.



Immunoprecipitation - Anti-CD8 alpha antibody [EPR21769] - BSA and Azide free (ab230156)

CD8 alpha was immunoprecipitated from 0.35 mg of mouse thymus lysate with ab217344 at 1/30 dilution. Western blot was performed from the immunoprecipitate using ab217344 at 1/2000 dilution. VeriBlot for IP Detection Reagent (HRP) (ab131366), was used for detection at 1/10000 dilution.
Lane 1: Mouse thymus lysate 10 µg (Input).

Lane 2: ab217344 IP in mouse thymus lysate.

Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab214344 in mouse thymus lysate.

Exposure time: 5 seconds.

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

The two bands are different isoforms that are consistent with the literature (PMID 3085089).

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab217344).

All lanes:
Immunoprecipitation - Anti-CD8 alpha antibody [EPR21769] (ab217344)

Predicted band size: 26 kDa

Observed band size: 34-38 kDa

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