abcam

ab217344

Anti-CD8 alpha antibody [EPR21769]

Anti-CD8 alpha antibody [EPR21769] (ab217344) is a rabbit monoclonal antibody detecting CD8 alpha in **Western Blot, Flow Cytometry, IP, IHC-P, IHC-Fr**. Suitable for **Mouse**.

- Biophysical QC for unrivalled batch-batch consistency
- Over 160 publications

Recombinant | RabMAb | 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	EPR21769
Purification technique	Affinity purification Protein A
Concentration	0.524 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Tested

Species	Mouse
Dilution info	1/30
Notes	-

Flow Cyt

Tested

Species	Mouse
Dilution info	1/500
Notes	-

WB

Tested

Species	Mouse
Dilution info	1/1000
Notes	-

IHC-Fr

Tested

Species	Mouse
Dilution info	1/500
Notes	-

IHC-P

Tested

Species	Mouse
Dilution info	1/2000
Notes	Background staining was observed in mouse testis samples. Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

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	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-CD8 alpha antibody [EPR21769] (ab217344) was developed by Abcam using patented rabbit monoclonal antibody technology and is validated for use in Flow Cyt, IHC-Fr IHC-P, IP and WB.

Anti-CD8 alpha antibody [EPR21769] (ab217344) was first used in a scientific publication in 2019 and has been cited over 164 times in peer reviewed journals. It's performance in IHC and Immunofluorescence in mouse samples is trusted by the scientific community.

Abcam's high quality manufacturing and validation processes ensure Anti-CD8 alpha antibody [EPR21769] (ab217344) has high sensitivity and specificity alongside high lot-to-lot consistency and reproducibility.

Anti-CD8 alpha antibody [EPR21769] (ab217344) has 4 independent reviews from customers.

Anti-CD8 alpha antibody [EPR21769] (ab217344) specifically detects CD8 alpha (UniProt ID: P01731; Molecular weight: 25kDa) and is sold in 100 µL and 1 mL selling sizes.

Conjugation-ready, carrier free format available for antibody clone EPR21769 - ab230156.

Antibody clone EPR21769 is also available pre-conjugated to a variety of labels for your convenience - Alexa Fluor® 488, Alexa Fluor® 647, FITC, APC, Alexa Fluor® 594, Alexa Fluor® 555, PE (ab237364, ab237365, ab237367, ab237368, ab277939, ab280863, ab306536).

CD8 alpha is involved in diseases by aiding cytotoxic T cells in targeting and eliminating infected or malignant cells. CD8 T cell dysfunction is associated with several diseases including Autoimmune disease, cancer and infectious diseases.

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.

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

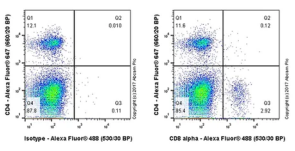
We do not recommend this combination. It is not covered by our product promise.

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.

7 product images

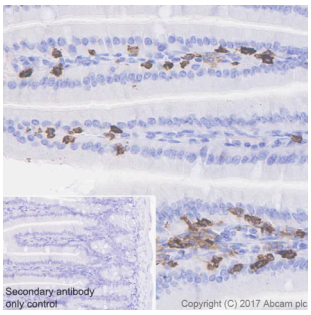


Flow Cytometry - Anti-CD8 alpha antibody [EPR21769] (ab217344)

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

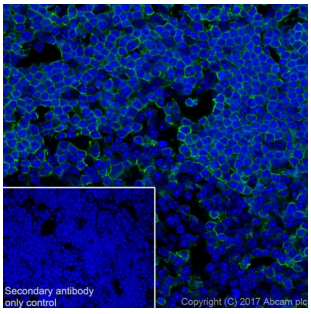
total viable cells.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CD8 alpha antibody [EPR21769] (ab217344)

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. Heat mediated antigen retrieval was performed using Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) Ready to use.

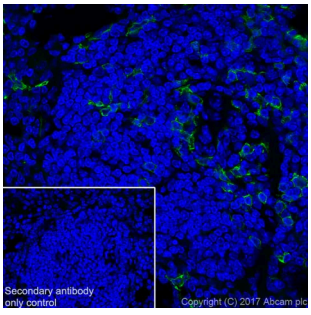


Immunohistochemistry (Frozen sections) - Anti-CD8 alpha antibody [EPR21769] (ab217344)

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.

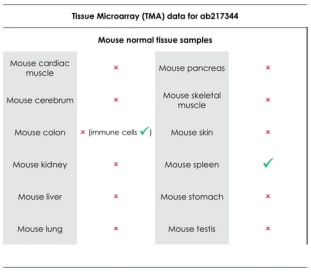


Immunohistochemistry (Frozen sections) - Anti-CD8 alpha antibody [EPR21769] (ab217344)

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

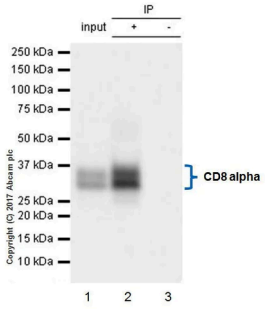
Immunohistochemical analysis of 4% paraformaldehyde-fixed, 0.2% Triton X-100 permeabilized frozen mouse spleen tissue labeling CD8 alpha with ab217344 at 1/500 dilution, followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green). Positive membrane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



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CD8 alpha antibody [EPR21769] (ab217344)

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).



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

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.

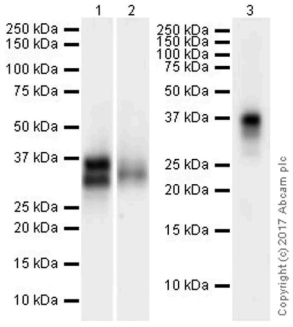
Blocking and dilution buffer and concentration: 5% NFDM/TBST.

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

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

Predicted band size: 26 kDa

Observed band size: 34-38 kDa



Western blot - Anti-CD8 alpha antibody [EPR21769] (ab217344)

CD8 alpha Western blot staining using rabbit Anti-CD8 alpha antibody

Exposure time : Lane 1: 3 sconds; Lane 2: 40 seconds; Lane 3: 15 seconds.
Blocking/Dilution buffer: 5% NFDM/TBST.

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

The blot was developed on a BIO-RAD® ChemiDoc™ MP instrument.

All lanes:
Western blot - Anti-CD8 alpha antibody [EPR21769] (ab217344) at 1/1000 dilution

Lane 1:
Mouse thymus lysate at 20 µg

Lane 2:
Mouse spleen lysate at 20 µg

Lane 3:
Mouse lymph node lysate at 10 µg

Secondary

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

Developed using the ECL technique.

Predicted band size: 26 kDa

Observed band size: 35 kDa

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