abcam

ab109296

Anti-CD7 antibody [EPR4242]

Anti-CD7 antibody [EPR4242] (ab109296) is a rabbit monoclonal antibody detecting CD7 in **Western Blot, Flow Cytometry (Intra), IP, IHC-P, ICC/IF**. Suitable for **Human, Mouse, Rat**.

- Biophysical QC for unrivalled batch-batch consistency

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	EPR4242
Purification technique	Affinity purification Protein A
Dissociation constant	2.4 x 10^{-12} M
Concentration	0.5 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Mouse
Dilution info	1/8000
Notes	**For unpurified use at 1/1600.** Perform heat-mediated antigen retrieval before commencing with IHC staining protocol.

Species	Rat
Dilution info	1/8000
Notes	**For unpurified use at 1/1600.** Perform heat-mediated antigen retrieval before commencing with IHC staining protocol.

Species	Human
Dilution info	1/8000
Notes	**For unpurified use at 1/1600.** Perform heat-mediated antigen retrieval before commencing with IHC staining protocol.

ICC/IF

Tested

Species	Human
Dilution info	1/50
Notes	**For unpurified use at 1/100 - 1/250.**

Expected

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

IP

Tested

Species	Human
Dilution info	1/10 - 1/100

Notes	-

Expected

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

WB

Tested

Species	Human
Dilution info	1/1000 - 1/10000
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/100
Notes	-

Expected

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

Target data

See full target information CD7

Function	Transmembrane glycoprotein expressed by T-cells and natural killer (NK) cells and their precursors (PubMed:7506726). Plays a costimulatory role in T-cell activation upon binding to its ligand K12/SECTM1 (PubMed:10652336). In turn, mediates the production of cytokines such as IL-2 (PubMed:1709867). On resting NK-cells, CD7 activation results in a significant induction of interferon-gamma levels (PubMed:7506726).

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

What is this antibody validated in?
Anti-CD7 antibody [EPR4242] (ab109296) is a rabbit recombinant monoclonal antibody and is validated for use in Western Blot (WB), Flow Cytometry (Intra), Immunoprecipitation (IP), Immunohistochemistry (IHC-P), Immunocytochemistry/immunofluorescence (ICC/IF) in Human, Mouse, Rat samples.

What is the molecular weight of CD7?
Anti-CD7 [EPR4242] (ab109296) specifically detects a band for CD7 (UniProt: P09564) at a molecular weight of 25kDa.

Other related products
We have a range of other formats of antibody clone [EPR4242] also available for your convenience: ab109296, Alexa Fluor® 488 - ab199022, Alexa Fluor® 647 - ab199023, Carrier free - ab230834, Alexa Fluor® 594 - ab277233, Alexa Fluor® 555 - ab279334, PE - ab303140, APC - ab303141, HRP - ab303142, Alkaline Phosphatase - ab308876, Alexa Fluor® 568 - ab312617, Alexa Fluor® 750 - ab320942

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.

Trial sizes available!
Test your antibody or perform pre-screening before committing to a larger quantity. Sold in 20µl. Discover our selection of trial-size antibodies.

Supplementary info

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

Activity summary	CD7 also known as Leu-9 or GP40 is a cell surface protein with a mass of approximately 40 kDa. The target is mainly expressed on T cells and NK cells and can be found during early T-cell development. Researchers also report CD7 expression in some B cell lineage progenitors. The CD7 function involves mediating cell signal transduction which contributes to the activation and differentiation of immune cells making it an important target in immunology studies.
Biological function summary	CD7 plays a role in modulating interactions between immune cells without being part of a larger complex. It bridges interactions promoting immune responses by influencing T cell proliferation and cytokine production. CD7 control is important in regulating immune response intensity and provides an essential checkpoint in immune system modulation. Variations in CD7 function can significantly influence immune cell behavior impacting host defense mechanisms.
Pathways	CD7 participates in immune signaling pathways such as the T-cell receptor (TCR) signaling pathway. This pathway is essential for T cell activation and involves proteins like CD3 and ZAP-70 which work together with CD7 to transduce activation signals. Alterations in the CD7 pathway can affect the downstream signaling events leading to changes in immune cell activation and function.
Associated diseases and disorders	Aberrations in CD7 expression or function link to conditions like T-cell acute lymphoblastic leukemia (T-ALL) and certain autoimmune diseases. In T-ALL abnormal CD7 expression serves as an indicator for diagnosis and disease progression monitoring. CD7 also interacts with proteins such as CD45 and CD3 which play roles in leukemogenesis and immune system dysregulation. Studies also explore anti-CD7 strategies for therapeutic interventions aiming to modulate its activity for treating these conditions effectively.

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

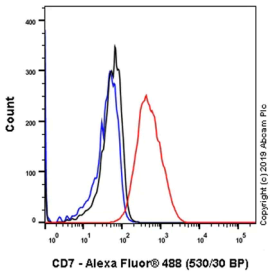
We do not recommend this combination. It is not covered by our product promise.

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.

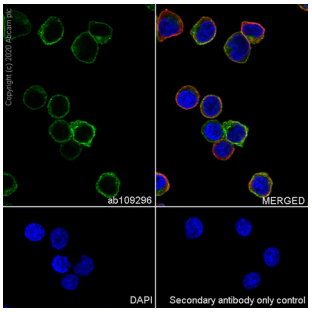
6 product images



Flow Cytometry (Intracellular) - Anti-CD7 antibody [EPR4242] (ab109296)

CD7 Flow Cytometry (Intracellular) staining using rabbit Anti-CD7 antibody

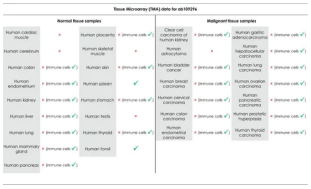
Intracellular flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized Jurkat (Human T cell leukemia T lymphocyte) cells labelling CD7 with purified ab109296 at 1/100 dilution (1µg) (Red) compared with a Rabbit monoclonal IgG (ab172730) (Black) isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue). A Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) at 1/2000 dilution was used as the secondary antibody.



Immunocytochemistry/ Immunofluorescence - Anti-CD7 antibody [EPR4242] (ab109296)

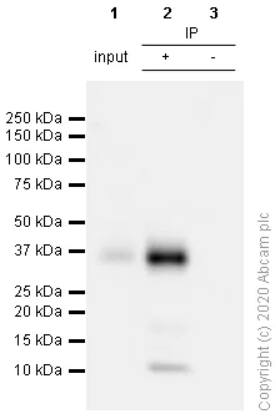
CD7 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-CD7 antibody

Immunocytochemistry analysis of Jurkat (Human T cell leukemia T lymphocyte) cells labeling CD7 with Purified ab109296 at 1/50 dilution (10 µg/mL). Cells were fixed in 4% Paraformaldehyde and permeabilized with 0.1% tritonX-100. Cells were counterstained with ab195889 Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) 1/200 dilution (2.5 µg/mL). Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) was used as the secondary antibody at 1/1000 dilution (2 µg/mL). DAPI (blue) was used as nuclear counterstain. PBS instead of the primary antibody was used as the secondary antibody only control.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CD7 antibody [EPR4242] (ab109296)

Tissue Microarrays stained for "Anti-CD7 antibody [EPR4242]" using "ab109296"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 Bond™ Epitope Retrieval Solution 2 (pH 9.0) for 20 minutes. The sections were incubated with ab109296 for 30 mins at room temperature followed by a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101). The immunostaining was performed on a Leica Biosystems BOND® RX instrument.



Immunoprecipitation - Anti-CD7 antibody [EPR4242] (ab109296)

CD7 was immunoprecipitated from 0.35 mg Human spleen lysate 10 ug with ab109296 at 1/50. Western blot was performed on the immunoprecipitate using ab109296 at 1/1000 dilution. VeriBlot for IP Detection Reagent (HRP)(ab131366) was used at 1/5000 dilution. Lane 1: Human spleen lysate 10 ug
Lane 2: ab109296 IP in Human spleen lysate

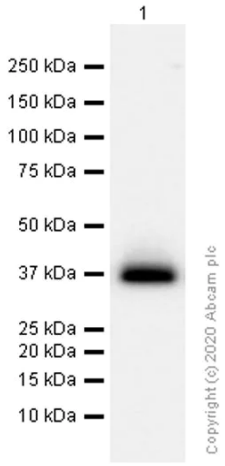
Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab109296 in Human spleen lysate

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

Exposure time: 10 seconds

All lanes:
Immunoprecipitation - Anti-CD7 antibody [EPR4242] (ab109296)

Predicted band size: 25 kDa



Western blot - Anti-CD7 antibody [EPR4242] (ab109296)

CD7 Western blot staining of Human Spleen Lysate using rabbit Anti-CD7 antibody

The molecular mass observed is consistent with what has been described in the literatures (PMID: 24157461, 2479685).
All lanes:
Western blot - Anti-CD7 antibody [EPR4242] (ab109296) at 1/10000 dilution

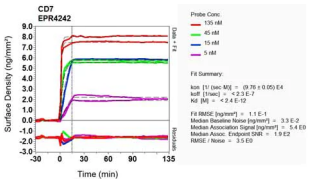
All lanes:
Human Spleen Lysate at 15 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG (HRP) with minimal cross-reactivity with human IgG at 1/2000 dilution

Predicted band size: 25 kDa

Observed band size: 37 kDa



OI-RD Scanning - Anti-CD7 antibody [EPR4242] (ab109296)

We have systematically measured KD (the equilibrium dissociation constant between the antibody and its antigen), of more than 840 recombinant antibodies to assess not only their individual KD values but also to see the average affinity of antibody. Based on the comparison with published literature values for mouse monoclonal antibodies, Recombinant antibodies appear to be on average 1-2 order of magnitude higher affinity.

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