abcam

ab248679

Anti-CD53 antibody [EPR4342(2)] - 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	EPR4342(2)
Purification technique	Affinity purification Protein A
Concentration	1.01 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	-

Notes	-

IP

Not recommended

Species	Human
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Target data

See full target information CD53

Function	Structural component of specialized membrane microdomains known as tetraspanin-enriched microdomains (TERMs), which act as platforms for receptor clustering and signaling (PubMed:28487417). Participates thereby in diverse biological functions such as cell signal transduction, adhesion, migration and protein trafficking (PubMed:32974937, PubMed:35767951). Plays a role in the activation of monocytes and B-cells (PubMed:8335905). Acts as an essential regulator of B-cell development by promoting interleukin-7 receptor/IL7R signaling (By similarity). Also promotes, in B-cells, the BCR signaling by recruiting PKC to the plasma membrane in order to phosphorylate its substrates (PubMed:28487417). Plays an essential role in B- and T-cells homing to lymph nodes by stabilizing L-selectin/SELL cell surface expression (By similarity). Also mediates metabolic and

inflammatory functions in hepatocytes and adipose tissue by promoting TNF and LPS signaling independent of the immune compartment (By similarity).

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

ab248679 is the carrier-free version of ab134094.

Species reactivity

Mouse, Rat: We have preliminary internal testing data to indicate this antibody may not react with these species. Please contact us for more information.

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	CD53 also known as Tetraspanin-25 is a transmembrane glycoprotein with a molecular mass of approximately 35-40 kDa. It belongs to the tetraspanin family characterized by four transmembrane domains. CD53 primarily resides on the surface of leukocytes including B cells T cells natural killer cells and macrophages. This protein plays an important role in signal transduction processes by organizing proteins on the cell membrane and forming tetraspanin-enriched microdomains.
Biological function summary	CD53 plays a significant role in regulating immune responses cell development and migration. It does not work alone but as part of larger protein complexes that influence cell communication and inter-organizational responses. CD53 participates in organizing membrane proteins into functional complexes which impacts cellular processes such as adhesion signaling and cellular activation. Its interaction with other proteins is critical to maintain normal immune system functionality and responding appropriately to infections.
Pathways	CD53 is involved in the regulation of immune signaling and cellular communication networks. It is a component of the tetraspanin web which influences the integrin and immunoreceptor pathways two important signaling pathways in cellular communication. Proteins such as CD9 and CD81 also members of the tetraspanin family frequently interact with CD53 suggesting cooperative roles in modulating cellular adhesion and trafficking processes critical for immune response.
Associated diseases and disorders	CD53 shows a connection to immune system dysfunctions including autoimmune conditions and certain types of cancer. Its altered expression can contribute to abnormal immune responses seen in diseases like systemic lupus erythematosus (SLE) and lymphoma. In these disorders CD53's interaction with CD19 and other B-cell-associated proteins plays a part in abnormal cell signaling leading to issues in cell proliferation or miscommunication within the immune system.

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

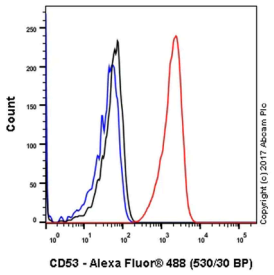
We do not recommend this combination. It is not covered by our product promise.

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.

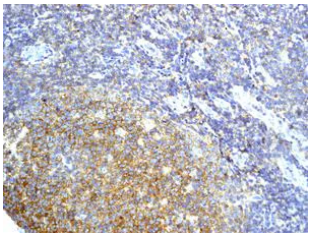
4 product images



Flow Cytometry (Intracellular) - Anti-CD53 antibody [EPR4342(2)] - BSA and Azide free (ab248679)

CD53 Flow Cytometry (Intracellular) staining using rabbit Anti-CD53 antibody

This data was developed using ab134094, the same antibody clone in a different buffer formulation.
Intracellular Flow Cytometry analysis of Jurkat (human acute T cell leukemia) cells labeling CD53 with unpurified ab134094 at 1/200 dilution (10ug/ml) (red). Cells were fixed with 4% paraformaldehyde and permeabilised with 90% methanol. A Goat anti rabbit IgG (Alexa Fluor® 488) (1/2000 dilution) was used as the secondary antibody. Rabbit monoclonal IgG (Black) was used as the isotype control, cells without incubation with primary antibody and secondary antibody (Blue) were used as the unlabeled control.

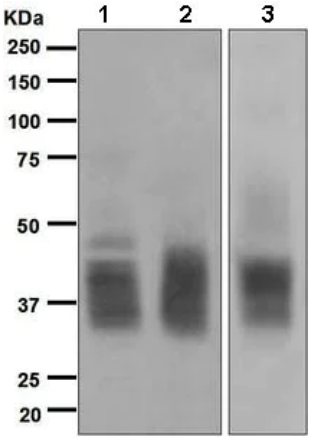


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CD53 antibody [EPR4342(2)] - BSA and Azide free (ab248679)

CD53 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-CD53 antibody

This data was developed using ab134094, the same antibody clone in a different buffer formulation.
Immunohistochemical analysis of paraffin-embedded Human tonsil tissue labelling CD53 with ab134094 at 1/100 dilution.

Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.



Western blot - Anti-CD53 antibody [EPR4342(2)] - BSA and Azide free (ab248679)

All lanes:
Western blot - Anti-CD53 antibody [EPR4342(2)] (ab134094) at 1/1000 dilution

Lane 1:
Raji cell lysate at 10 µg

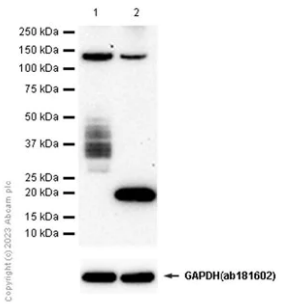
Lane 2:
PBMC cell lysate at 10 µg

Lane 3:
Jurkat cell lysate at 10 µg

Secondary

All lanes:
HRP labelled goat anti-rabbit at 1/2000 dilution

Predicted band size: 24 kDa



Western blot - Anti-CD53 antibody [EPR4342(2)] - BSA and Azide free (ab248679)

This data was developed using ab134094, the same antibody clone in a different buffer formulation.

Blocking and dilution buffer: 5% NFDM/TBST.

We are not sure how to define the extra band.

All lanes:
Western blot - Anti-CD53 antibody [EPR4342(2)] (ab134094) at 1/5000 dilution

Lane 1:
Raji (Human Burkitt's lymphoma B lymphocyte) whole cell lysate at 20 µg

Lane 2:
Raji (Human Burkitt's lymphoma B lymphocyte) whole cell lysate. lysate was treated with Deglycosylase at 1/20 dilution

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Predicted band size: 24 kDa

Observed band size: 20 kDa

Exposure time: 180s

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