abcam

ab249454

Anti-C4B-d / C4B-b antibody [EPR11203] - BSA and Azide free

Rabbit Recombinant Monoclonal C4B-d / C4B-b antibody. Carrier free. Suitable for WB, Flow Cyt (Intra) and reacts with Human samples.

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	EPR11203
Purification technique	Affinity purification Protein A

Reactivity data

ICC/IF

Not recommended

Species	Human
Dilution info	-
Notes	-

IP

Not recommended

Species	Human
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	-
Notes	-

IHC-P

Not recommended

Species	Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Target data

See full target information C4B

Function Precursor of non-enzymatic components of the classical, lectin and GZMK complement pathways, which consist in a cascade of proteins that leads to phagocytosis and breakdown of pathogens and signaling that strengthens the

adaptive immune system. Complement C4b-B. Non-enzymatic component of C3 and C5 convertases (By similarity). Generated following cleavage by complement proteases (C1S, MASP2 or GZMK, depending on the complement pathway), it covalently attaches to the surface of pathogens, where it acts as an opsonin that marks the surface of antigens for removal (By similarity). It then recruits the serine protease complement C2b to form the C3 and C5 convertases, which cleave and activate C3 and C5, respectively, the next components of the complement pathways (PubMed:8538770). Complement C4b-B isotype catalyzes the transacylation of the thioester carbonyl group to form ester bonds with carbohydrate antigens, while C4b-A isotype is responsible for effective binding to form amide bonds with immune aggregates or protein antigens (PubMed:8538770). C4a anaphylatoxin. Putative humoral mediator released following cleavage by complement proteases (C1S, MASP2 or GZMK, depending on the complement pathway). While it is strongly similar to anaphylatoxins, its role is unclear. Was reported to act as a mediator of local inflammatory process; however these effects were probably due to contamination with C3a and/C5a anaphylatoxins in biological assays.

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

ab249454 is the carrier-free version of ab168358.

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 'C4b' protein also known as the 'C4b complement' plays a significant role in the immune system. This protein is a part of the larger complement system specifically as a segment derived from the cleavage of the native 'C4 complement'. It has an estimated molecular mass of about 200 kDa. The 'C4b' protein is prominently expressed on the surface of cells and in body fluids where the immune response is active. As an important player in the complement pathway it binds covalently to foreign particles labeling them for destruction or removal by immune cells.
Biological function summary	The 'C4b complement' interacts with various other components of the immune system. It is particularly involved in the formation of the C3 and C5 convertase complexes which are essential for the opsonization and activation cascade leading to pathogen elimination. Its attachment to cellular surfaces provides a docking point for proteins such as C2 facilitating the further cleavage and progression of the complement cascade. This interaction is critical for driving the classical and lectin pathways of complement activation.
Pathways	The 'C4b protein' is integral to the classical pathway of complement activation as well as to the lectin pathway. It associates with proteins like C1s C1q and factor B forming complexes that execute various stages of immune defenses. By forming C3 and C5 convertase 'C4b' not only promotes phagocytosis but also inflammation and cell lysis through membrane attack complexes. These processes underlie the body's ability to address microbial invasions efficiently.
Associated diseases and disorders	'C4b complement dysregulation' can lead to autoimmune conditions such as systemic lupus erythematosus (SLE) and type 1 diabetes. In SLE reduced or malfunctional 'C4b' increases susceptibility to infections and triggers inappropriate immune responses. It can also correlate with the deficiency of related proteins like C2 which further impairs the complement system. These associations indicate that proper regulation of 'C4b' is essential for maintaining immune system stability and preventing overactive 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

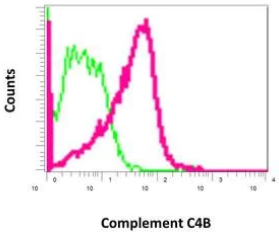
We do not recommend this combination. It is not covered by our product promise.

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.

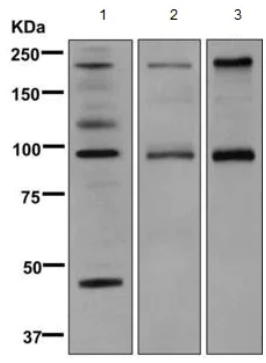
3 product images



Flow Cytometry (Intracellular) - Anti-C4B-d / C4B-b antibody [EPR11203] - BSA and Azide free (ab249454)

C4B-d / C4B-b Flow Cytometry (Intracellular) staining using rabbit Anti-C4B-d / C4B-b antibody

This data was developed using ab168358, the same antibody clone in a different buffer formulation.
Intracellular flow cytometric analysis of permeabilized HepG2 cells labeling C4b with ab168358 at 1/10 dilution (red) compared to a rabbit IgG negative control (green).



Western blot - Anti-C4B-d / C4B-b antibody [EPR11203] - BSA and Azide free (ab249454)

C4B-d / C4B-b Western blot staining using rabbit Anti-C4B-d / C4B-b antibody

This data was developed using ab168358, the same antibody clone in a different buffer formulation.
All lanes:
Western blot - Anti-C4B-d / C4B-b antibody [EPR11203] (ab168358) at 1/1000 dilution

Lane 1:
Human serum lysate at 10 µg

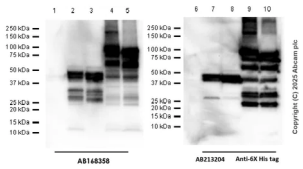
Lane 2:
Human fetal liver lysate at 10 µg

Lane 3:
HepG2 cell lysate at 10 µg

Secondary

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

Predicted band size: 193 kDa



Western blot - Anti-C4B-d / C4B-b antibody [EPR11203] - BSA and Azide free (ab249454)

C4B-d / C4B-b Western blot staining using rabbit Anti-C4B-d / C4B-b antibody

This data was developed using ab168358, the same antibody clone in a different buffer formulation.
Blocking and diluting buffer and concentration: 5% NFDM/TBST.

Lanes 1 - 5:
Western blot - Anti-C4B-d / C4B-b antibody [EPR11203] (ab168358) at 1/1000 dilution

Lanes 6 - 10:
Western blot - Anti-6X His tag® antibody [EPR20547] - ChIP Grade (ab213204) at 1/5000 dilution

Lanes 1 and 6:
293T cells transfected with an empty vector containing a His tag whole cell lysate at 20 µg

Lanes 2 and 7:
293T cells transfected with a human C4d-A (Uniprot: P0C0L4 aa957-1336) expression vector containing a His-tag whole cell lysate at 20 µg

Lanes 3 and 8:
293T cells transfected with a human C4d-B (Uniprot: P0C0L5 aa957-1336) expression vector containing a His-tag whole cell lysate at 20 µg

Lanes 4 and 9:
293T cells transfected with a human C4-A alpha chain (Uniprot: P0C0L4 aa680- 1446) expression vector containing a His-tag whole cell lysate at 20 µg

Lanes 5 and 10:
293T cells transfected with a human C4b-A (Uniprot: P0C0L4 aa757-1446) expression vector containing a His-tag whole cell lysate at 20 µg

Secondary

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

Observed band size: 45-100 kDa

Exposure time: 1s

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