abcam

ab228975

Anti-FCGRT/FCRN antibody [EPR22627-25]

Anti-FCGRT/FCRN antibody [EPR22627-25] (ab228975) is a rabbit monoclonal antibody detecting FCGRT/FCRN in **Western Blot, Flow Cytometry, IP, IHC-P**. Suitable for **Human**.

- 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	EPR22627-25
Purification technique	Affinity purification Protein A
Concentration	0.562 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Tested

Species	Human

Dilution info	1/30
Notes	-

Flow Cyt

Tested

Species	Human
Dilution info	1/500
Notes	-

WB

Tested

Species	Human
Dilution info	1/1000
Notes	-

ICC/IF

Not recommended

Species	Human
Dilution info	-
Notes	-

IHC-P

Tested

Species	Human
Dilution info	1/4000
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Target data

See full target information FCGRT

Function	Cell surface receptor that transfers passive humoral immunity from the mother to the newborn. Binds to the Fc region of monomeric immunoglobulin gamma and mediates its selective uptake from milk (PubMed:10933786, PubMed:7964511). IgG in the milk is bound at the apical surface of the intestinal epithelium. The resultant FcRn-IgG complexes are transcytosed across the intestinal epithelium and IgG is released from FcRn into blood or tissue fluids. Throughout life, contributes to effective humoral immunity by recycling IgG and extending its half-life in the circulation. Mechanistically, monomeric IgG binding to FcRn in acidic endosomes of endothelial and hematopoietic cells recycles IgG to the cell surface where it is released into the circulation (PubMed:10998088). In addition of IgG, regulates homeostasis of the other most abundant circulating protein albumin/ALB (PubMed:24469444, PubMed:28330995). (Microbial infection) Acts as an uncoating receptor for a panel of echoviruses including Echovirus 5, 6, 7, 9, 11, 13, 25 and 29.

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-FCGRT/FCRN antibody [EPR22627-25] (ab228975) is a rabbit recombinant monoclonal antibody and is validated for use in Western Blot (WB), Flow Cytometry (Flow Cyt), Immunoprecipitation (IP), Immunohistochemistry (IHC-P) in Human samples.

What is the molecular weight of FCGRT/FCRN?
Anti-FCGRT/FCRN [EPR22627-25] (ab228975) specifically detects a band for FCGRT/FCRN (UniProt: P55899) at a molecular weight of 40kDa.

Other related products
We have a range of other formats of antibody clone [EPR22627-25] also available for your convenience: ab228975, Carrier free - ab256121

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	The protein FCGRT also known as FCRN or FcRn has a significant role in the immune system by binding to the Fc region of immunoglobulin G (IgG). This binding prolongs the half-life of IgG by preventing its lysosomal degradation. The molecular mass of the FCGRT protein is roughly 52 kDa. It is prominently expressed in epithelial and endothelial cells across several tissues including the placenta and liver ensuring IgG stability in circulation.
Biological function summary	FCGRT/FCRN is involved in the transportation and recycling of IgG antibodies. It forms a complex with beta-2 microglobulin that contributes to its function. This complex allows IgG antibodies to traverse cellular barriers such as epithelial cells without being digested. This protein is important in maintaining humoral immunity by regulating IgG levels in the bloodstream and similar processes can be observed in mouse FCRN and cynomolgus monkey milk indicating a conserved mechanism across species.
Pathways	FCGRT/FCRN plays a part in the neonatal Fc receptor pathway. This pathway influences IgG homeostasis and impacts antigen presentation to T cells. By doing so it affects immune surveillance and immune tolerance mechanisms. The pathway involves interactions with related proteins such as albumin which also binds to FCRN for extending its half-life in serum.
Associated diseases and disorders	Disruptions in FCGRT/FCRN functionality relate to autoimmune conditions and inflammatory diseases. Conditions such as lupus and myasthenia gravis show altered IgG recycling or transportation implicating FCRN in their pathology. Accordingly researchers have explored FCRN inhibitors as potential therapeutic interventions. These inhibitors aim to modulate the interaction between FCRN and IgG therefore impacting the disease progression linked to these disorders.

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.

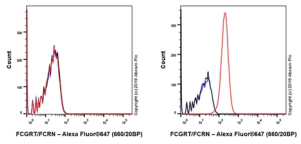
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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.

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7 product images

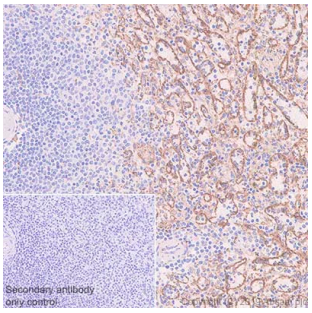


Flow Cytometry - Anti-FCGRT/FCRN antibody [EPR22627-25] (ab228975)

FCGRT/FCRN Flow Cytometry staining using rabbit Anti-FCGRT/FCRN antibody

Flow cytometric analysis of HeLa (human cervix adenocarcinoma epithelial cell, Left) / THP-1 (human monocytic leukemia monocyte, Right) cells labeling FCGRT/FCRN with ab228975 at 1/500 dilution (Red) compared with a Rabbit monoclonal IgG (ab172730) (Black) isotype control and an unlabeled control (cells without incubation with primary antibody and secondary antibody) (Blue). Goat anti rabbit IgG (Alexa Fluor® 647, ab150079) at 1/2000 dilution was used as the secondary antibody. Bright fluorophore (like AF647) conjugated secondary antibodies are recommended to get good separation.
Negative control: HeLa (PMID: 21216798).

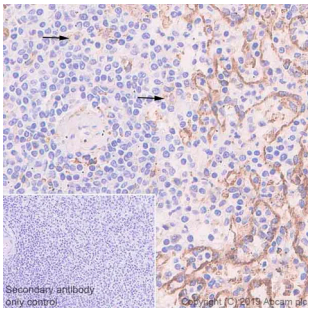
Gated on viable cells.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-FCGRT/FCRN antibody [EPR22627-25] (ab228975)

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

Immunohistochemical analysis of paraffin-embedded human spleen tissue labeling FCGRT/FCRN with ab228975 at 1/4000 dilution (0.14 µg/ml) followed by a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101). Positive staining on endothelial cells of human spleen (PMID: 28402755) is observed. The section was incubated with ab228975 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with hematoxylin. Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution 2) for 20mins.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).

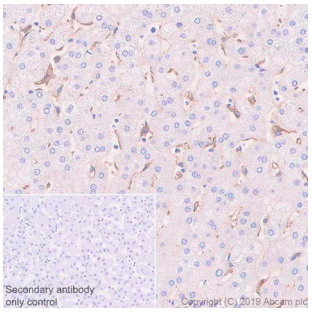


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-FCGRT/FCRN antibody [EPR22627-25] (ab228975)

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

Immunohistochemical analysis of paraffin-embedded human spleen tissue labeling FCGRT/FCRN with ab228975 at 1/4000 dilution followed by a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101). Positive staining on human spleen, arrows indicate the macrophages (PMID: 28402755) is observed .The section was incubated with ab228975 for 30 mins at room temperature.
The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with hematoxylin. Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution 2) for 20mins.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).

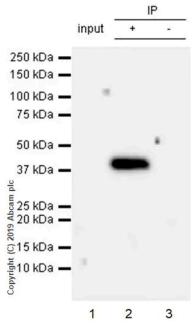


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-FCGRT/FCRN antibody [EPR22627-25] (ab228975)

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

Immunohistochemical analysis of paraffin-embedded human liver tissue labeling FCGRT/FCRN with ab228975 at 1/4000 dilution followed by a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101). Positive staining on human liver (PMID: 28402755) is observed. The section was incubated with ab228975 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with hematoxylin.
Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution 2) for 20mins.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).



Immunoprecipitation - Anti-FCGRT/FCRN antibody [EPR22627-25] (ab228975)

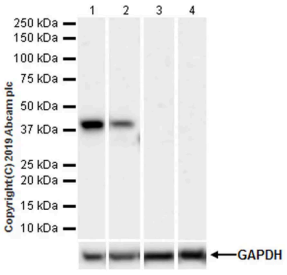
FCGRT/FCRN was immunoprecipitated from 0.35 mg HEK-293 (human embryonic kidney epithelial cell) whole cell lysate with ab228975 at 1/30 dilution (2µg in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab228975 1/1000 dilution (0.55 µg/ml). VeriBlot for IP Detection Reagent (HRP) (ab131366) was used as the secondary antibody at 1/5000 dilution.
Lane 1: HEK-293 (human embryonic kidney epithelial cell) whole cell lysate 10µg
Lane 2: ab228975 IP in HEK-293 whole cell lysate
Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab228975 in HEK-293 whole cell lysate.

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

Exposure time: 100 seconds.

All lanes:
Immunoprecipitation - Anti-FCGRT/FCRN antibody [EPR22627-25] (ab228975)

Predicted band size: 40 kDa



Western blot - Anti-FCGRT/FCRN antibody [EPR22627-25] (ab228975)

FCGRT/FCRN Western blot staining using rabbit Anti-FCGRT/FCRN antibody

Blocking/Diluting buffer and concentration: 5% NFDM/TBST.
Exposure times: Lane 1: 37 secs; Lane 2-4: 3 mins.

Negative control: LNCaP (PMID: 27974681) and HeLa (PMID: 21216798).

All lanes:
Western blot - Anti-FCGRT/FCRN antibody [EPR22627-25] (ab228975) at 1/1000 dilution

Lane 1:
THP-1 (human monocytic leukemia monocyte), whole cell lysate at 20 µg

Lane 2:
HEK-293 (human embryonic kidney epithelial cell), whole cell lysate at 20 µg

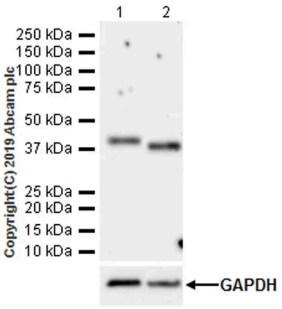
Lane 3:
LNCaP (human prostate carcinoma epithelial cell), whole cell lysate at 20 µg

Lane 4:
HeLa (human cervix adenocarcinoma epithelial cell), whole cell lysate at 20 µg

Secondary

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

Predicted band size: 40 kDa



Western blot - Anti-FCGRT/FCRN antibody [EPR22627-25] (ab228975)

FCGRT/FCRN Western blot staining using rabbit Anti-FCGRT/FCRN antibody

Blocking/Diluting buffer and concentration: 5% NFDM/TBST.
Human FCGRT/FCRN possesses one potential glycosylation site. The molecular weight of deglycosylated FCGRT/FCRN is consistent with the literature (PMID: 12163559).

All lanes:
Western blot - Anti-FCGRT/FCRN antibody [EPR22627-25] (ab228975) at 1/1000 dilution

Lane 1:
Human placenta tissue lysate at 20 µg

Lane 2:
Human placenta treated with PNGase F tissue lysate at 20 µg

Secondary

All lanes:
Western blot - VeriBlot for IP Detection Reagent (HRP) (ab131366) at 1/1000 dilution

Predicted band size: 40 kDa

Exposure time: 3min

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