abcam

ab277640

Anti-Transferrin antibody [EPR20149-224] - BSA and Azide free

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	EPR20149-224
Purification technique	Affinity purification Protein A
Concentration	1.017 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ICC/IF

Tested

Species	Human
Dilution info	-

Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

IP

Tested

Species	Human
Dilution info	-
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	-
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

IHC-P

Tested

Species	Human
Dilution info	-
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

Target data

See full target information TF

Function	Transferrins are iron binding transport proteins which can bind two Fe(3+) ions in association with the binding of an anion, usually bicarbonate. It is responsible for the transport of iron from sites of absorption and heme degradation to those of storage and utilization. Serum transferrin may also have a further role in stimulating cell proliferation. (Microbial infection) Serves as an iron source for Neisseria species, which capture the protein and extract its iron for their own use. (Microbial infection) Serves as an iron source for parasite T.brucei (strain 427), which capture TF via its own transferrin receptor ESAG6:ESAG7 and extract its iron for its own use.

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C

Notes

ab277640 is the carrier-free version of ab277635.

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	Transferrin also known as serotransferrin or siderophilin is a glycoprotein with a mass of approximately 80 kDa. It is primarily synthesized in the liver and subsequently secreted into the bloodstream. Transferrin has an important role in iron transport and maintains iron homeostasis by binding and delivering iron to various tissues throughout the body. It can bind two ferric ions (Fe3+) in

	association with an anion usually bicarbonate. In biological fluids transferrin exists in serum plasma and other extracellular fluids.
Biological function summary	Transferrin facilitates the transportation of iron ions. It delivers iron to cells by binding to transferrin receptors on cell surfaces forming a complex that gets internalized via receptor-mediated endocytosis. Inside the endosomes acidic conditions cause iron to release from transferrin enabling its utilization in cellular processes like DNA synthesis and electron transport. Transferrin itself acts independently and does not form part of a larger protein complex. Variants of transferrin include mouse transferrin bovine transferrin and biotinylated transferrin each with similar function across different species.
Pathways	Transferrin operates centrally in iron metabolism and homeostasis pathways. It functions in coordination with the transferrin receptor 1 (TfR1) which facilitates cellular uptake of the transferrin-iron complex. Additionally transferrin plays a role in the hepcidin regulatory pathway. Hepcidin modulates iron homeostasis by decreasing iron absorption in the intestine and controlling iron release from macrophages and hepatocytes. Transferrin's ability to bind iron connects it to other iron-containing proteins such as ferritin which stores excess iron in cells.
Associated diseases and disorders	Several iron-related conditions can impact transferrin function including anemia and hemochromatosis. Anemia often occurs when there is insufficient iron delivery leading to inadequate hemoglobin synthesis and reduced oxygen transport. Aberrant transferrin receptor activity affects iron uptake in such conditions. Hemochromatosis characterized by iron overload can occur due to mutations in genes like HFE leading to changes in hepcidin regulation and increased intestinal iron absorption. Transferrin levels and saturation are clinical indicators used to assess iron status in such diseases.

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

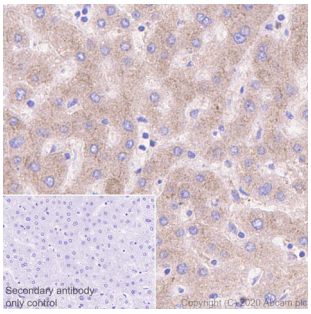
We do not recommend this combination. It is not covered by our product promise.

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.

8 product images



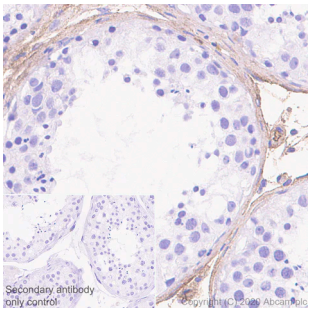
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Transferrin antibody [EPR20149-224] - BSA and Azide free (ab277640)

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

This data was developed using ab277635, the same antibody clone in a different buffer formulation.
Immunohistochemical analysis of paraffin-embedded Human liver tissue labeling Transferrin with ab277635 at 1/100 (5.04 ug/ml) followed by a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101). Cytoplasmic staining on human liver. The section was incubated with ab277635 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with Hematoxylin.

Secondary antibody only control: Secondary antibody is a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).

Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins.



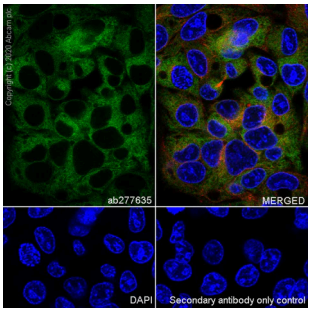
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Transferrin antibody [EPR20149-224] - BSA and Azide free (ab277640)

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

This data was developed using ab277635, the same antibody clone in a different buffer formulation.
Immunohistochemical analysis of paraffin-embedded Human testis tissue labeling Transferrin with ab277635 at 1/100 (5.04 ug/ml) followed by a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101). Positive staining on stromal cells of human testis. The section was incubated with ab277635 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with Hematoxylin.

Secondary antibody only control: Secondary antibody is a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).

Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins.

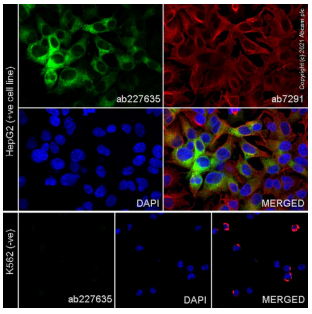


Immunocytochemistry/ Immunofluorescence - Anti-Transferrin antibody [EPR20149-224] - BSA and Azide free (ab277640)

Transferrin Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Transferrin antibody

This data was developed using ab277635, the same antibody clone in a different buffer formulation.
Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized HepG2 cells labelling Transferrin with ab277635 at 1/100 (5.04 ug/ml) dilution, followed by ab150077 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) antibody at 1/1000 dilution (Green). Confocal image showing cytoplasmic staining in HepG2 cell line. ab195889 Anti-alpha Tubulin mouse monoclonal antibody - Microtubule Marker (Alexa Fluo® 594) was used to counterstain tubulin at 1/200 dilution (Red). The Nuclear counterstain was DAPI (Blue).

Secondary antibody only control: Secondary antibody is ab150077 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) at 1/1000 dilution.



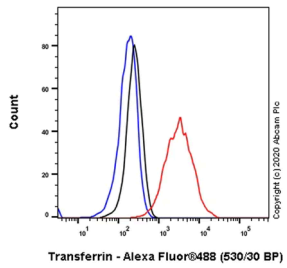
Immunocytochemistry/ Immunofluorescence - Anti-Transferrin antibody [EPR20149-224] - BSA and Azide free (ab277640)

Transferrin Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Transferrin antibody

This data was developed using ab277635, the same antibody clone in a different buffer formulation.
ab277635 staining Transferrin in HepG2 cells, with negative expression in K562 cells. The cells were fixed with 4% formaldehyde (10 min), permeabilised with 0.1% Triton x-100 for 5 minutes and then blocked with 1% BSA/10% normal goat serum/0.3M glycine in 0.1% PBS-Tween for 1h. The cells were then incubated overnight at +4°C with ab277635 at 1 µg/ml and ab7291, Mouse monoclonal [DM1A] to alpha Tubulin at 0.5 µg/ml. Cells were then incubated with ab150081, Goat polyclonal Secondary Antibody to Rabbit IgG - H&L (Alexa Fluor® 488), pre-adsorbed at 1/1000 dilution (shown in green) and ab150119, Goat polyclonal Secondary Antibody to Mouse IgG - H&L (Alexa Fluor® 647), pre-adsorbed at 1/1000 dilution (shown in red). Nuclear DNA was labelled with DAPI (shown in blue).

Image was acquired with a confocal microscope (Leica-Microsystems TCS SP8) and a single confocal section is shown.

This product also work with 100% methanol (5 min) fixation under the same testing conditions.

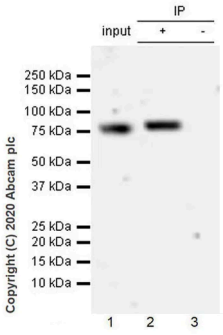


Flow Cytometry (Intracellular) - Anti-Transferrin antibody [EPR20149-224] - BSA and Azide free (ab277640)

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

This data was developed using ab277635, the same antibody clone in a different buffer formulation.
Intracellular flow cytometric analysis of 4% paraformaldehyde-fixed, 90% methanol-permeabilized HepG2 (human hepatocellular carcinoma epithelial cell) cells labelling Transferrin with ab277635 at 1/500 dilution (0.1ug) (Red) compared with a Rabbit monoclonal IgG (ab172730) isotype control (Black) 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.



Immunoprecipitation - Anti-Transferrin antibody [EPR20149-224] - BSA and Azide free (ab277640)

This data was developed using ab277635, the same antibody clone in a different buffer formulation.
Transferrin was immunoprecipitated from 0.35 mg Human liver tissue lysate with ab277635 at 1/30 dilution (2ug in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab277635 at 1/1000 dilution. VeriBlot for IP Detection Reagent (HRP)(ab131366) was used at 1/5000 dilution.

Lane 1: Human liver tissue lysate 10 ug

Lane 2: ab277635 IP in Human liver tissue lysate

Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab277635 in Human liver tissue lysate

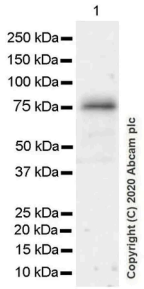
Blocking and dilution buffer and concentration: 5% NFDM/TBST.

Exposure time: 3 minutes.

All lanes:
Immunoprecipitation - Anti-Transferrin antibody [EPR20149-224] - Serum Loading Control (ab277635)

Predicted band size: 77 kDa

Observed band size: 77 kDa



Western blot - Anti-Transferrin antibody [EPR20149-224] - BSA and Azide free (ab277640)

Transferrin Western blot staining of HepG2 (human hepatocellular carcinoma epithelial cell), whole cell lysate using rabbit Anti-Transferrin antibody

This data was developed using ab277635, the same antibody clone in a different buffer formulation.
Blocking and diluting buffer and concentration: This blot was developed using a higher sensitivity ECL substrate.

3 minutes

Exposure time:

All lanes:
Western blot - Anti-Transferrin antibody [EPR20149-224] - Serum Loading Control (ab277635) at 1/1000 dilution

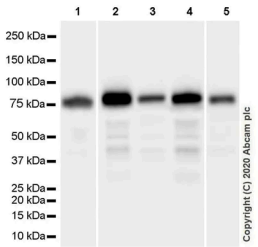
All lanes:
HepG2 (human hepatocellular carcinoma epithelial cell), whole cell lysate at 20 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated (ab97051) at 1/100000 dilution

Predicted band size: 77 kDa

Observed band size: 77 kDa



Western blot - Anti-Transferrin antibody [EPR20149-224] - BSA and Azide free (ab277640)

Transferrin Western blot staining using rabbit Anti-Transferrin antibody

This data was developed using ab277635, the same antibody clone in a different buffer formulation.
Blocking and diluting buffer and concentration: 5% NFDM/TBST.

Exposure times: Lane 1-4: 3.25 seconds.

Lane 5 15 seconds.

All lanes:
Western blot - Anti-Transferrin antibody [EPR20149-224] - Serum Loading Control (ab277635) at 1/1000 dilution

Lane 1:
Human plasma at 20 µL

Lane 2:
Human breast tissue lysate at 20 µg

Lane 3:
Human kidney tissue lysate at 20 µg

Lane 4:
Human testis tissue lysate at 20 µg

Lane 5:
Human liver tissue lysate at 20 µg

Secondary

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

Lanes 2 - 5:
VeriBlot for IP secondary antibody(HRP)(ab131366) at 1/1000 dilution

Predicted band size: 77 kDa

Observed band size: 77 kDa

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