abcam

ab316295

Anti-Transferrin antibody [RM1092] - Serum Loading Control

Lab Essentials | 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	Multiclonal
Immunogens	The exact immunogen used to generate this antibody is proprietary information.
Clone number	RM1092
Purification technique	Affinity purification Protein A
Concentration	0.493 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Tested

Species	Human
Dilution info	1/1000
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

IHC-P

Tested

Species	Human
Dilution info	1/100
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/5000
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

IP

Tested

Species	Human
Dilution info	1/30
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/500
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 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 are recombinant multiclonals?
Recombinant multiclonals are a mixture of recombinant antibodies co-expressed from a library of heavy and light chains. They offer several advantages including:

- The sensitivity of polyclonal antibodies by recognising multiple epitopes
- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

View our range of recombinant multiclonal antibodies.

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.

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

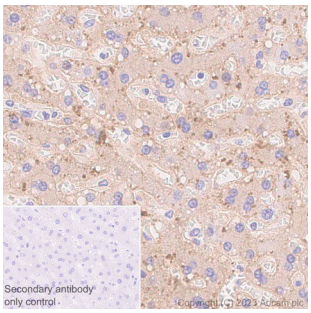
We do not recommend this combination. It is not covered by our product promise.

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.

7 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Transferrin antibody [RM1092] - Serum Loading Control (ab316295)

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

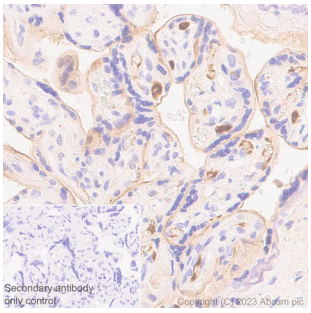
Immunohistochemical analysis of paraffin-embedded Human liver tissue labeling Transferrin with ab316295 at 1/100 (4.93 ug/ml) dilution, followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

Positive staining on human liver.
The section was incubated with ab316295 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 LeicaDS9800 (Bond™ Polymer Refine Detection).

Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Transferrin antibody [RM1092] - Serum Loading Control (ab316295)

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

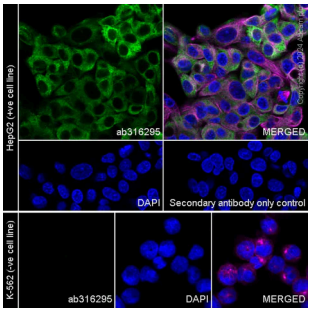
Immunohistochemical analysis of paraffin-embedded Human placenta tissue labeling Transferrin with ab316295 at 1/100 (4.93 ug/ml) dilution, followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

Positive staining on human placenta.
The section was incubated with ab316295 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 LeicaDS9800 (Bond™ Polymer Refine Detection).

Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins



Immunocytochemistry/ Immunofluorescence - Anti-Transferrin antibody [RM1092] - Serum Loading Control (ab316295)

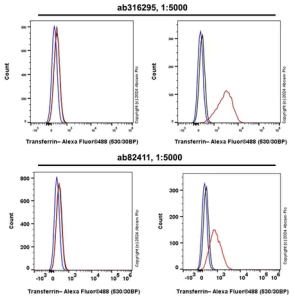
Transferrin Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Transferrin antibody

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized HepG2 (human hepatocellular carcinoma epithelial cell) cells labelling Transferrin with ab316295 at 1/500 (0.98 ug/ml) dilution, followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed antibody at 1/1000 (2 ug/ml) dilution (Green).

Confocal image showing cytoplasmic staining in HepG2 cell line.
Negative control: K-562
Image was taken with a confocal microscope(Leica-Microsystems, TCS SP8).

ab195889 Anti-alpha Tubulin mouse monoclonal antibody - Microtubule Marker (Alexa Fluor® 594) was used to counterstain tubulin at 1/200 (2.5ug/ml) dilution (Magenta). The Nuclear counterstain was DAPI (Blue).

Secondary antibody only control: Secondary antibody is ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 (2 ug/ml) dilution.



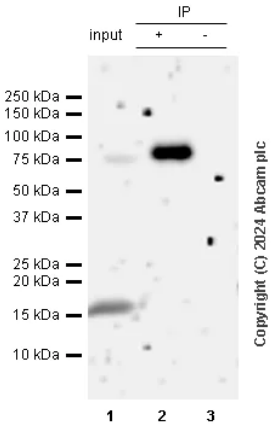
Flow Cytometry (Intracellular) - Anti-Transferrin antibody [RM1092] - Serum Loading Control (ab316295)

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

Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized K-562 (human chronic myelogenous leukemia lymphoblast, Left) / HepG2 (human hepatocellular carcinoma epithelial cell, Right) cells labelling Transferrin with ab316295 at 1/5000 dilution (0.01 ug)/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).

Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) at 1/5000 dilution was used as the secondary antibody.

Negative control: K-562. For ab316295, positive staining occurred in HepG2 cells and no staining in K-562 cells. The control batch (ab82411) showed similar staining pattern. In addition, ab316295 showed stronger staining than ab82411 in HepG2 cells.



ab316295
Recombinant multiclonal

Immunoprecipitation - Anti-Transferrin antibody [RM1092] - Serum Loading Control (ab316295)

Transferrin was immunoprecipitated from 0.35 mg HepG2 (human hepatocellular carcinoma epithelial cell) whole cell lysate with ab316295 at 1/30 dilution (2ug in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab316295 at 1/1000 dilution. VeriBlot for IP secondary antibody(HRP)(ab131366) was used at 1/5000 dilution.

Lane 1: HepG2 (human hepatocellular carcinoma epithelial cell) whole cell lysate
Lane 2: ab316295 IP in HepG2 (human hepatocellular carcinoma epithelial cell) whole cell lysate
Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab316295 in HepG2 whole cell lysate

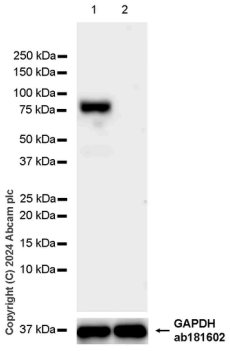
All lanes:
Immunoprecipitation - Anti-Transferrin antibody [RM1092] - Serum Loading Control (ab316295) at 1/30 dilution

All lanes:
HepG2 (human hepatocellular carcinoma epithelial cell) whole cell lysate

Secondary

All lanes:
Immunoprecipitation - VeriBlot for IP Detection Reagent (HRP) (ab131366) at 1/5000 dilution

Exposure time: 180s



Western blot - Anti-Transferrin antibody [RM1092] - Serum Loading Control (ab316295)

Transferrin Western blot staining using rabbit Anti-Transferrin antibody

Negative control: K-562.

The lysates were freshly made and used for Western Blotting immediately to minimize protein degradation.

In Western blot, Anti-GAPDH antibody [EPR16891] - Loading Control (ab181602) staining at 1/200000 dilution.

All lanes:
Western blot - Anti-Transferrin antibody [RM1092] - Serum Loading Control (ab316295) at 1/1000 dilution

Lane 1:
HepG2(human hepatocellar carcinoma epithelial cell) whole cell lysate at 40 µg

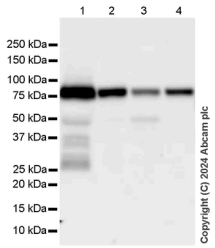
Lane 2:
K-562 (human chronic myelogenous leukemia lymphoblast) whole cell lysate at 40 µg

Secondary

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

Observed band size: 77 kDa, 36 kDa

Exposure time: 15s



Western blot - Anti-Transferrin antibody [RM1092] - Serum Loading Control (ab316295)

Transferrin Western blot staining using rabbit Anti-Transferrin antibody

Transferrin might be easily degraded. The expression molecular weight observed is consistent with what has been described in the literature (PMID: 15271890).

All lanes:
Western blot - Anti-Transferrin antibody [RM1092] - Serum Loading Control (ab316295) at 1/1000 dilution

Lane 1:
Human plasma tissue lysate at 20 µg

Lane 2:
Human testis tissue lysate at 20 µg

Lane 3:
Human liver tissue lysate at 20 µg

Lane 4:
Human skeletal muscle tissue lysate at 20 µg

Secondary

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

Observed band size: 77 kDa

Exposure time: 26s

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