abcam

ab244555

Anti-Transferrin Receptor antibody [OX26] - BSA and Azide free

Key facts

Isotype	IgG2a
Host species	Mouse
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	OX26
Purification technique	Affinity purification
Light chain type	kappa
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Mouse
Dilution info	5 µg/mL

Notes	-

Species	Rat
Dilution info	5 µg/mL
Notes	-

Flow Cyt

Tested

Species	Rat
Dilution info	0.2 µg/mL
Notes	-

Expected

Species	Mouse
Dilution info	Use at an assay dependent concentration.
Notes	-

Target data

See full target information TFRC

Function

Cellular uptake of iron occurs via receptor-mediated endocytosis of ligand-occupied transferrin receptor into specialized endosomes (PubMed:26214738). Endosomal acidification leads to iron release. The apotransferrin-receptor complex is then recycled to the cell surface with a return to neutral pH and the concomitant loss of affinity of apotransferrin for its receptor. Transferrin receptor is necessary for development of erythrocytes and the nervous system (By similarity). A second ligand, the hereditary hemochromatosis protein HFE, competes for binding with transferrin for an overlapping C-terminal binding site. Positively regulates T and B cell proliferation through iron uptake (PubMed:26642240). Acts as a lipid sensor that regulates mitochondrial fusion by regulating activation of the JNK pathway (PubMed:26214738). When dietary levels of stearate (C18:0) are low, promotes activation of the JNK pathway, resulting in HUWE1-mediated ubiquitination and subsequent degradation of the mitofusin MFN2 and inhibition of mitochondrial fusion (PubMed:26214738). When dietary levels of stearate (C18:0) are high, TFRC stearoylation inhibits activation of the JNK pathway and thus degradation of the mitofusin MFN2 (PubMed:26214738). Mediates uptake of NICOL1 into fibroblasts where it may regulate extracellular matrix production (By similarity). (Microbial infection) Acts as a receptor for new-world arenaviruses: Guanarito, Junin and Machupo virus. (Microbial infection) Acts as a host entry factor for rabies virus that

hijacks the endocytosis of TFRC to enter cells. (Microbial infection) Acts as a host entry factor for SARS-CoV, MERS-CoV and SARS-CoV-2 viruses that hijack the endocytosis of TFRC to enter cells. (Microbial infection) Acts as a receptor for Plasmodium vivax.

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	+4°C
Aliquoting information	Upon delivery aliquot
Storage information	Do Not Freeze

Notes

ab244555 is the carrier-free version of ab6331.
Want a custom formulation?
This antibody clone is manufactured by Abcam. If you require a custom buffer formulation or conjugation for your experiments, please contact orders@abcam.com

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 transferrin receptor commonly referred to as TfR or CD71 is an integral membrane protein that facilitates the uptake of transferrin-bound iron into cells.

	This receptor has a molecular weight of around 95 kDa and often exists as a homodimer on the cell surface. It is widely expressed in many tissues especially in erythroid precursors and rapidly dividing cells. Alternate names for this receptor include TfR1 and TfR2 though they have distinct roles and distributions. Other transmembrane proteins like OX26 and MEM have been studied in relation to the transferrin receptor due to their involvement in drug delivery.
Biological function summary	TfR plays a critical role in iron homeostasis by mediating the internalization of transferrin and release of iron in the endosomes. It operates as part of the transferrin-transferrin receptor complex facilitating iron assimilation necessary for DNA synthesis and cell growth. Iron release involves acidifying endosomes allowing transferrin to bind with specific cellular receptors including alternate forms like beta 2 transferrin. The process subsequently contributes to erythropoiesis and various metabolic processes by regulating essential cellular iron levels.
Pathways	The transferrin receptor is central to iron metabolism and the receptor-mediated endocytosis pathway. It tightly interacts with transferrin and intracellular pathways process the iron released from transferrin within endosomes. The receptor's role in this pathway involves a dynamic with other proteins such as HFE and hepcidin. These interactions help control systemic iron levels linking closely to the maintenance of erythroid cell health and proliferation.
Associated diseases and disorders	Disruptions in transferrin receptor function correlate with anemia and neurodegenerative disorders. In anemia related to iron deficiency impaired TfR activity reduces iron uptake culminating in insufficient erythropoiesis. Altered receptor expression or function also connects to neurological diseases like Alzheimer's where iron dysregulation is a concern. Here the transferrin receptor interacts with proteins like Amyloid precursor protein contributing to disease pathology through improper metal homeostasis.

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

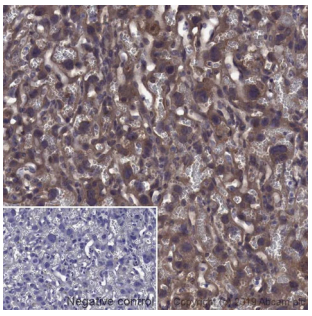
We do not recommend this combination. It is not covered by our product promise.

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.

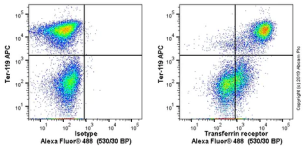
3 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Transferrin Receptor antibody [OX26] - BSA and Azide free (ab244555)

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

This data was developed using the same antibody clone in a different buffer formulation (ab6331). IHC image of Transferrin receptor staining in normal mouse placenta formalin fixed paraffin embedded tissue section, using Mouse on Mouse detection kit ab127055. The section was pre-treated using pressure cooker heat mediated antigen retrieval with sodium citrate buffer (pH6) for 30mins. The section was incubated with ab6331, 5µg/ml overnight at +4°C. The section was counterstained with hematoxylin and mounted with DPX. The inset secondary-only control image is taken from an identical assay without primary antibody.



Flow Cytometry - Anti-Transferrin Receptor antibody [OX26] - BSA and Azide free (ab244555)

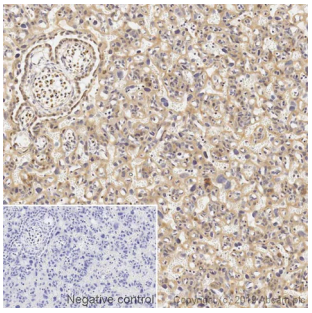
Transferrin Receptor Flow Cytometry staining using mouse Anti-Transferrin Receptor antibody

This data was developed using the same antibody clone in a different buffer formulation (ab6331). Lewis rat bone marrow cells stained with ab6331 (right) or mouse IgG2a kappa (ab170191) isotype (left). Cells were incubated for 30 min on ice in 1x PBS containing 10 % rat serum to block FC receptors and non-specific protein-protein interaction followed by the antibody (ab6331) or mouse IgG2a kappa (ab170191) isotype (1x 10^6 in 100 µl at 0.2 µg/ml) for 30 min on ice.

The secondary antibody Goat anti-mouse IgG H&L (Alexa Fluor ®488, pre-adsorbed) (ab150117) was used at 1/2000 dilution for 30 min on ice.

The cells were simultaneously stained with Ter-119.

Acquisition of >30,000 events were collected using a 50 mW Blue laser (488nm) and 530/30 bandpass filter. Events were gated on live single cells.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Transferrin Receptor antibody [OX26] - BSA and Azide free (ab244555)

This data was developed using the same antibody clone in a different buffer formulation (ab6331). IHC image of Transferrin receptor staining in a section of formalin-fixed paraffin-embedded normal rat placenta performed on a Leica BOND™ system using the standard Protocol F, omitting the post-primary step. The section was pre-treated using heat mediated antigen retrieval with EDTA buffer (pH9, epitope retrieval solution 2) for 20mins. The section was then incubated with ab6331, 5µg/ml, for 15 mins at room temperature. The section was then incubated with ab98792 (Rabbit polyclonal Secondary Antibody to Mouse IgG - H&L, pre-adsorbed) 1/500 for 15 mins at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with hematoxylin and mounted with DPX. The inset secondary-only control image is taken from an identical assay without primary antibody.

For other IHC staining systems (automated and non-automated) customers should optimize variable parameters such as antigen retrieval conditions, primary antibody concentration and antibody incubation times.

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