### Overview

<table>
<thead>
<tr>
<th><strong>Product name</strong></th>
<th>Anti-Transferrin Receptor antibody</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description</strong></td>
<td>Rabbit polyclonal to Transferrin Receptor</td>
</tr>
<tr>
<td><strong>Host species</strong></td>
<td>Rabbit</td>
</tr>
<tr>
<td><strong>Tested applications</strong></td>
<td>Suitable for: WB, IHC-P, ICC/IF, IHC-FrFl, Flow Cyt</td>
</tr>
<tr>
<td><strong>Species reactivity</strong></td>
<td>Reacts with: Mouse, Human</td>
</tr>
<tr>
<td></td>
<td>Predicted to work with: Dog, Pig, Orangutan</td>
</tr>
<tr>
<td><strong>Immunogen</strong></td>
<td>Synthetic peptide corresponding to Human Transferrin Receptor aa 1-100 conjugated to keyhole limpet haemocyanin.</td>
</tr>
<tr>
<td></td>
<td>Database link: <a href="http://example.com">P02786</a> (Peptide available as ab101219)</td>
</tr>
</tbody>
</table>

### Properties

<table>
<thead>
<tr>
<th><strong>Form</strong></th>
<th>Liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Storage instructions</strong></td>
<td>Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C or -80°C. Avoid freeze / thaw cycle.</td>
</tr>
<tr>
<td><strong>Storage buffer</strong></td>
<td>pH: 7.40</td>
</tr>
<tr>
<td></td>
<td>Preservative: 0.02% Sodium azide</td>
</tr>
<tr>
<td></td>
<td>Constituent: PBS</td>
</tr>
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</table>

- Batches of this product that have a concentration < 1mg/ml may have BSA added as a stabilising agent. If you would like information about the formulation of a specific lot, please contact our scientific support team who will be happy to help.

<table>
<thead>
<tr>
<th><strong>Purity</strong></th>
<th>Immunogen affinity purified</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Clonality</strong></td>
<td>Polyclonal</td>
</tr>
<tr>
<td><strong>Isotype</strong></td>
<td>IgG</td>
</tr>
</tbody>
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### Applications
Our Abpromise guarantee covers the use of ab84036 in the following tested applications.
The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

<table>
<thead>
<tr>
<th>Application</th>
<th>Abreviews</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>WB</td>
<td>⭐⭐⭐⭐⭐</td>
<td>Use a concentration of 1 µg/ml. Detects a band of approximately 98 kDa (predicted molecular weight: 84 kDa).</td>
</tr>
<tr>
<td>IHC-P</td>
<td>⭐⭐⭐⭐⭐</td>
<td>1/6000. Perform heat mediated antigen retrieval before commencing with IHC staining protocol.</td>
</tr>
<tr>
<td>ICC/IF</td>
<td>⭐⭐⭐⭐⭐</td>
<td>Use a concentration of 5 µg/ml.</td>
</tr>
<tr>
<td>IHC-FrFrI</td>
<td>⭐⭐⭐⭐⭐</td>
<td>1/200.</td>
</tr>
<tr>
<td>Flow Cyt</td>
<td>⭐⭐⭐⭐⭐</td>
<td>Use 1µg for 10^6 cells.</td>
</tr>
</tbody>
</table>

**Target**

**Function**
Cellular uptake of iron occurs via receptor-mediated endocytosis of ligand-occupied transferrin receptor into specialized endosomes. 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).

(Microbial infection) Acts as a receptor for new-world arenaviruses: Guanarito, Junin and Machupo virus.

**Involvement in disease**
Immunodeficiency 46

**Sequence similarities**
Belongs to the peptidase M28 family. M28B subfamily.
Contains 1 PA (protease associated) domain.

**Post-translational modifications**
N- and O-glycosylated, phosphorylated and palmitoylated. The serum form is only glycosylated.
Proteolytically cleaved on Arg-100 to produce the soluble serum form (sTfR).
Palmitoylated on both Cys-62 and Cys-67. Cys-62 seems to be the major site of palmitoylation.

**Cellular localization**
Secreted and Cell membrane. Melanosome. Identified by mass spectrometry in melanosome fractions from stage I to stage IV.

**Images**
Immunocytochemistry/ Immunofluorescence - Anti-Transferrin Receptor antibody (ab84036)
D’Hooghe et al. PLoS One. 2017 Aug 17;12(8):e0182695. doi: 10.1371/journal.pone.0182695. eCollection 2017. Fig 1. Reproduced under the Creative Commons license http://creativecommons.org/licenses/by/4.0/

Analysis of co-localisation of FcRn with cellular markers.
HepG2 (Human liver hepatocellular carcinoma cell line) cells were fixed, permeabilized and co-stained with anti-FcRn humanised Fab’, followed by anti-human IgG conjugated Alexa Fluor®488 (Top left panel. Bar 5 μm) and ab84036 followed by anti-rabbit/mouse conjugated Alexa Fluor®568 (Top right panel). FcRn fluorescence is shown in green and marker fluorescence is shown in red, yellow fluorescence in the overlay images (Bottom left panel) indicates co-localization.
Images are magnifications of the white boxed area (Bottom right panel. Bar 20 μm).

Western blot - Anti-Transferrin Receptor antibody (ab84036)
Lane 1 : HeLa (Human epithelial carcinoma cell line) whole cell lysate
Lane 2 : Jurkat (Human T cell lymphoblast-like cell line) whole cell lysate
Lane 3 : U-2 OS (Human osteosarcoma cell line) whole cell lysate

Lysates/proteins at 10 μg per lane.

Secondary
All lanes : Goat Anti-Rabbit IgG H&L (HRP) preadsorbed (ab97080) at 1/5000 dilution

Developed using the ECL technique.

Performed under reducing conditions.

Predicted band size: 84 kDa
**Observed band size:** 98 kDa

**why is the actual band size different from the predicted?**

**Additional bands at:** 37 kDa. We are unsure as to the identity of these extra bands.

**Exposure time:** 4 minutes

Transferrin Receptor contains a number of potential glycosylation sites (SwissProt) which may explain its migration at a higher molecular weight than predicted.

**Immunocytochemistry/ Immunofluorescence - Anti-Transferrin Receptor antibody (ab84036)**

ICC/IF image of ab84036 stained HeLa (Human epithelial cell line from cervix adenocarcinoma) cells.

The cells were fixed in 4% formaldehyde (10 minutes) then permeabilized using 0.1% PBS-Triton and then incubated in 1% BSA / 10% normal goat serum / 0.3M glycine in 0.1% PBS-Tween for 1 hour to further permeabilize the cells and block non-specific protein-protein interactions. The cells were then incubated with the antibody ab84036 at 1 µg/ml overnight at +4°C.

The secondary antibody (pseudo-colored green) was an Alexa-Fluor® 488 goat anti- rabbit (ab150081) IgG (H+L) preadsorbed, used at a 1/1000 dilution for 1 hour. Alexa-Fluor® 594 WGA was used to label plasma membranes (pseudo-colored red) at a 1/200 dilution for 1 hour at room temperature.

DAPI was used to stain the cell nuclei (pseudo-colored blue) at a concentration of 1.43 µM for 1 hour at room temperature.

**Immunohistochemistry - Free Floating - Anti-Transferrin Receptor antibody (ab84036)**

This image is courtesy of an Abreview submitted by Ruma Raha-Chowdhury

ab84036 staining mouse liver sections by IHC-FrFl.

The animal was perfused with 4% paraformaldehyde, further post fixed with 4% paraformaldehyde overnight and prepared for free floating sectioning. Staining with ab84036 at a 1/200 dilution in 0.1% Triton X with 0.1x PBS and 10% donkey was performed for 24 hours at 24°C. A donkey anti-rabbit Alexa-Fluor®568 polyclonal antibody was used as the secondary antibody.
ab84036 immunohistochemical staining in the rat brain. Samples were fixed with formaldehyde and heat-mediated antigen retrieval was performed with citric acid. Tissue sections were blocked in 1% BSA for 10 minutes at 21°C before incubation with ab84036 (1/6000) for 16 hours at 21°C. A biotin conjugated goat anti-rabbit IgG secondary was used at 1/250.

ab84036 staining Transferrin Receptor in canine kidney cells by Immunocytochemistry/Immunofluorescence. Cells were fixed in paraformaldehyde, permeabilized with 0.5% saponin then incubated with ab84036 at a 1/100 dilution for 1.5 hours at 20°C. The secondary used was an Alexa-Fluor®568 conjugated donkey anti-rabbit polyclonal, used at a 1/350 dilution.
Anti-Transferrin Receptor antibody (ab84036) at 1 µg/ml + Mouse spleen tissue lysate at 10 µg

**Secondary**
Goat Anti-Rabbit IgG H&L (HRP) preadsorbed (ab97080) at 1/5000 dilution

Developed using the ECL technique.

Performed under reducing conditions.

**Predicted band size:** 84 kDa

**Observed band size:** 100,50 kDa  *why is the actual band size different from the predicted?*

**Exposure time:** 8 minutes

Transferrin Receptor contains a number of potential glycosylation sites (SwissProt) which may explain its migration at a higher molecular weight than predicted.

Overlay histogram showing MCF7 cells stained with ab84036 (red line). The cells were fixed with 80% methanol (5 min) and then permeabilized with 0.1% PBS-Triton X-100 for 15 min. The cells were then incubated in 1x PBS containing 10% normal goat serum to block non-specific protein-protein interaction followed by the antibody (ab84036) (1x10^6 in 100µl at 1 µg/ml) for 30 min at 22°C.

The secondary antibody Goat anti-mouse IgG H&L (Alexa Fluor® 488, pre-adsorbed) (ab150117) was used at 1/2000 for 30 min at 22°C.

Isotype control antibody (black line) was Rabbit IgG (polyclonal) (ab171870) used at the same concentration and conditions as the primary antibody. Unlabelled sample (blue line) was also used as a control.

Acquisition of >5,000 events were collected using a 50 mW Blue laser (488nm) and 530/30 bandpass filter.

*Please note:* All products are "FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES"

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