**Product datasheet**

**Anti-Transferrin Receptor antibody [EPR20584]**

**ab214039**

**Overview**

<table>
<thead>
<tr>
<th>Product name</th>
<th>Anti-Transferrin Receptor antibody [EPR20584]</th>
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</thead>
<tbody>
<tr>
<td>Description</td>
<td>Rabbit monoclonal [EPR20584] to Transferrin Receptor</td>
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<tr>
<td>Host species</td>
<td>Rabbit</td>
</tr>
<tr>
<td>Tested applications</td>
<td>Suitable for: IHC-P, ICC/IF, IP, WB</td>
</tr>
<tr>
<td>Species reactivity</td>
<td>Reacts with: Mouse, Human</td>
</tr>
<tr>
<td>Immunogen</td>
<td>Recombinant fragment within Human Transferrin Receptor aa 100-450. The exact sequence is proprietary. Database link: P02786</td>
</tr>
</tbody>
</table>

**Positive control**

WB: Human fetal liver and placenta lysates; Mouse spleen, testis and placenta lysates; K562, TF-1, Jurkat and RAW 264.7 whole cell lysates. IHC-P: Human placenta, cerebrum, esophagus and esophageal cancer tissues; Mouse kidney tissue. ICC/IF: K562 and RAW 264.7 cells. IP: K562 whole cell lysate.

**General notes**

Our RabMab® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMab® patents.

This product is a recombinant rabbit monoclonal antibody.

**Properties**

<table>
<thead>
<tr>
<th>Form</th>
<th>Liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Storage buffer</td>
<td>Preservative: 0.01% Sodium azide Constituents: 0.05% BSA, 40% Glycerol, PBS</td>
</tr>
<tr>
<td>Purity</td>
<td>Protein A purified</td>
</tr>
<tr>
<td>Clonality</td>
<td>Monoclonal</td>
</tr>
<tr>
<td>Clone number</td>
<td>EPR20584</td>
</tr>
<tr>
<td>Isotype</td>
<td>IgG</td>
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</table>
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

Applications

Our Abpromise guarantee covers the use of ab214039 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>IHC-P</td>
<td>1/500. Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.</td>
<td></td>
</tr>
<tr>
<td>ICC/IF</td>
<td>1/100.</td>
<td></td>
</tr>
<tr>
<td>IP</td>
<td>1/30.</td>
<td></td>
</tr>
<tr>
<td>WB</td>
<td>1/1000. Detects a band of approximately 90 kDa (predicted molecular weight: 85 kDa).</td>
<td></td>
</tr>
</tbody>
</table>
Lanes 1-2: Anti-Transferrin Receptor antibody [EPR20584] (ab214039) at 1/2000 dilution
Lane 3: Anti-Transferrin Receptor antibody [EPR20584] (ab214039) at 1/1000 dilution

Lane 1: K562 (human chronic myelogenous leukemia cell line from bone marrow) whole cell lysate at 10 µg
Lane 2: Jurkat (human T cell leukemia cell line from peripheral blood) whole cell lysate at 10 µg
Lane 3: TF-1 (human bone marrow erythroleukemia cell line) whole cell lysate at 20 µg

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

Predicted band size: 85 kDa
Observed band size: 90 kDa
why is the actual band size different from the predicted?

Blocking/Dilution buffer: 5% NFDM/TBST.
Exposure time: Lane 1: 2 seconds; Lane 2: 1 minute; Lane 3: 1 second.
Immunofluorescent analysis of 100% methanol-fixed RAW 264.7 (mouse macrophage cell line transformed with Abelson murine leukemia virus) cells labeling Transferrin Receptor with ab214039 at 1/100 dilution, followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green). Confocal image showing positive staining on RAW 264.7 cells.

The nuclear counter stain is DAPI (blue). Tubulin is detected with Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) (ab195889) (red) at 1/200 dilution.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution.

Immunofluorescent analysis of 100% methanol-fixed K562 (human chronic myelogenous leukemia cell line from bone marrow) cells labeling Transferrin Receptor with ab214039 at 1/100 dilution, followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green). Confocal image showing positive staining on K562 cells.

The nuclear counter stain is DAPI (blue). Tubulin is detected with Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) (ab195889) (red) at 1/200 dilution.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution.
Immunohistochemical analysis of paraffin-embedded human placenta tissue labeling Transferrin Receptor with ab214039 at 1/500 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) Ready to use. Positive staining on human placenta (PMID: 27483296). Counter stained with Hematoxylin.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) Ready to use.

**All lanes**: Anti-Transferrin Receptor antibody [EPR20584] (ab214039) at 1/1000 dilution

- **Lane 1**: Human fetal liver lysate
- **Lane 2**: Human placenta lysate

Lysates/proteins at 20 µg per lane.

**Secondary**

**All lanes**: VeriBlot for IP Detection Reagent (HRP) (ab131366) at 1/4000 dilution

**Predicted band size**: 85 kDa

**Observed band size**: 90 kDa why is the actual band size different from the predicted?

Blocking/Dilution buffer: 5% NFDM/TBST.

Exposure time: Lane 1: 3 seconds; Lane 2: 15 seconds.
**Western blot - Anti-Transferrin Receptor antibody**

*EPR20584* (ab214039)

**All lanes**: Anti-Transferrin Receptor antibody [EPR20584] (ab214039) at 1/1000 dilution

**Lane 1**: Mouse spleen lysate at 20 µg

**Lane 2**: Mouse testis lysate at 20 µg

**Lane 3**: Mouse placenta lysate at 20 µg

**Lane 4**: RAW 264.7 (mouse macrophage cell line transformed with Abelson murine leukemia virus) whole cell lysate at 10 µg

**Secondary**

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

**Predicted band size**: 85 kDa

**Observed band size**: 90 kDa. *Why is the actual band size different from the predicted?*

Blocking/Dilution buffer: 5% NFDM/TBST.

Exposure time: Lane 1/4: 3 seconds; Lane 2: 30 seconds; Lane 3: 1 second.
Immunohistochemical analysis of paraffin-embedded human cerebrum tissue labeling Transferrin Receptor with ab214039 at 1/500 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) Ready to use. Positive staining on capillaries of human cerebrum (PMID: 6095085). Counter stained with Hematoxylin.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) Ready to use.

Immunohistochemical analysis of paraffin-embedded human esophagus tissue labeling Transferrin Receptor with ab214039 at 1/500 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) Ready to use. Weakly cytoplasmic staining on human paracarcinoma esophagus. The staining intensity of human paracarcinoma esophagus was weaker than the human esophageal cancer tissue. Both paracarcinoma and human esophageal cancer tissues have been taken from the same patient (PMID: 24435655). Counter stained with Hematoxylin.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) Ready to use.
Immunohistochemical analysis of paraffin-embedded human esophageal cancer tissue labeling Transferrin Receptor with ab214039 at 1/500 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) Ready to use. Cytoplasmic staining on human esophageal cancer. The staining intensity of human esophageal cancer tissue was stronger than the human paracarcinoma esophagus tissue. Both paracarcinoma and human esophageal cancer tissues have been taken from the same patient (PMID: 24435655). Counter stained with Hematoxylin.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) Ready to use.

Immunohistochemical analysis of paraffin-embedded mouse kidney tissue labeling Transferrin Receptor with ab214039 at 1/500 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) Ready to use. Cytoplasmic staining on renal tubules of mouse kidney (PMID: 12538733). Counter stained with Hematoxylin.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) Ready to use.
Transferrin Receptor was immunoprecipitated from 0.35 mg of K562 (human chronic myelogenous leukemia cell line from bone marrow) lysate with ab214039 at 1/30 dilution. Western blot was performed from the immunoprecipitate using ab214039 at 1/1000 dilution. VeriBlot for IP Detection Reagent (HRP) (ab131366), was used for detection at 1/10,000 dilution.

Lane 1: K562 whole cell lysate 10 µg (Input).
Lane 2: ab214039 IP in K562 whole cell lysate.
Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab214039 in K562 whole cell lysate.

Blocking and dilution buffer and concentration: 5% NFDM/TBST.
Exposure time: 1 second.

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