abcam

ab314745

Anti-TAP1 antibody [EPR26236-57]

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	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR26236-57
Purification technique	Affinity purification Protein A
Concentration	0.511 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/50
Notes	-

Not recommended

Species	Mouse, Rat, Recombinant fragment - Human
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	1/1000
Notes	-

Not recommended

Species	Mouse, Rat, Recombinant fragment - Human
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/50
Notes	-

Not recommended

Species	Mouse, Rat, Recombinant fragment - Human
Dilution info	-
Notes	-

IP

Tested

Species	Human
Dilution info	1/30
Notes	-

Not recommended

Species	Mouse, Rat, Recombinant fragment - Human
Dilution info	-
Notes	-

Dot

Tested

Species	Recombinant fragment - Human
Dilution info	1/1000
Notes	-

Expected

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

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

IHC-P

Not recommended

Species	Mouse, Rat, Human, Recombinant fragment - Human
Dilution info	-

Notes	-

Target data

See full target information TAP1

Function	ABC transporter associated with antigen processing. In complex with TAP2 mediates unidirectional translocation of peptide antigens from cytosol to endoplasmic reticulum (ER) for loading onto MHC class I (MHCI) molecules (PubMed:25377891, PubMed:25656091). Uses the chemical energy of ATP to export peptides against the concentration gradient (PubMed:25377891). During the transport cycle alternates between 'inward-facing' state with peptide binding site facing the cytosol to 'outward-facing' state with peptide binding site facing the ER lumen. Peptide antigen binding to ATP-loaded TAP1-TAP2 induces a switch to hydrolysis-competent 'outward-facing' conformation ready for peptide loading onto nascent MHCI molecules. Subsequently ATP hydrolysis resets the transporter to the 'inward facing' state for a new cycle (PubMed:11274390, PubMed:25377891, PubMed:25656091). Typically transports intracellular peptide antigens of 8 to 13 amino acids that arise from cytosolic proteolysis via IFNG-induced immunoproteasome. Binds peptides with free N- and C-termini, the first three and the C-terminal residues being critical. Preferentially selects peptides having a highly hydrophobic residue at position 3 and hydrophobic or charged residues at the C-terminal anchor. Proline at position 2 has the most destabilizing effect (PubMed:11274390, PubMed:7500034, PubMed:9256420). As a component of the peptide loading complex (PLC), acts as a molecular scaffold essential for peptide-MHCI assembly and antigen presentation (PubMed:1538751, PubMed:25377891, PubMed:26611325).

Storage

Shipped at conditions	Conditional Ambient
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

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.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	The transporter associated with antigen processing 1 (TAP1) also known as ABCB2 is an ATP-binding cassette transporter with an important role in cellular immunity. TAP1 functions mechanically by transporting peptides from the cytosol into the endoplasmic reticulum. These peptides are typically 8-16 amino acids long and are processed for MHC class I molecules presentation. TAP1 has a molecular mass of approximately 75 kDa. Expression of TAP1 occurs primarily in cells of the immune system including lymphocytes and dendritic cells.
Biological function summary	TAP1 participates in the immune system by facilitating the presentation of peptide antigens to T cells. It forms a complex with TAP2 to transport antigenic peptides necessary for the proper functioning of the MHC class I pathway. This complex is essential for the immune system's ability to detect and respond to pathogens. Proper functioning of TAP1 ensures that peptides presented on MHC class I molecules are of endogenous origin allowing T cells to monitor cellular health and detect infected or transformed cells.
Pathways	TAP1 plays a role in the antigen processing and presentation pathway which is critical for adaptive immunity. This pathway involves specific steps in peptide processing where TAP1 along with TAP2 is essential for translocating peptides for binding to MHC class I complexes. Other related proteins in this pathway include calreticulin and tapasin which assist in peptide loading onto MHC class I molecules. Additionally TAP1 is involved in regulating cytosolic proteins' turnover through its role in transporting peptides that result from degraded proteins.
Associated diseases and disorders	TAP1 dysfunction or variants can lead to immune system-related diseases such as Bare Lymphocyte Syndrome (BLS) a condition characterized by the lack of MHC class I molecule expression. This results in compromised immune surveillance and increased susceptibility to infections. TAP1 is also linked to autoimmune diseases where abnormal peptide presentation may occur. It is associated with proteins like HLA molecules which are often implicated in autoimmune pathogenesis. Analyzing TAP1 expression and function provides insight into these disorders' underlying mechanisms.

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.

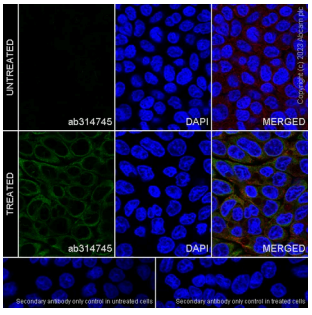
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In the unlikely event of one of our products not working as expected, you are covered by our product promise.

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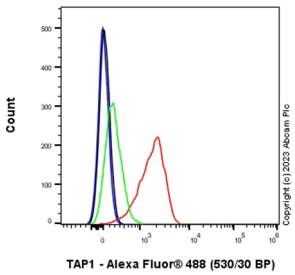
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5 product images



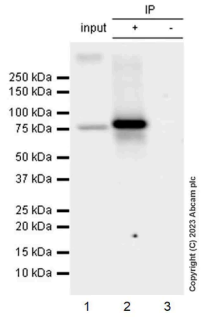
Immunocytochemistry/ Immunofluorescence - Anti-TAP1 antibody [EPR26236-57] (ab314745)

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized HT-29 (human colorectal adenocarcinoma epithelial cell) cells labelling TAP1 with ab314745 at 1/50 (10.1 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 increased cytoplasmic staining in HT-29 cells treated with 100 ng/ml IFN gamma for 48 hours. 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 (Red). 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-TAP1 antibody [EPR26236-57] (ab314745)

Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized HT-29 (human colorectal adenocarcinoma epithelial cell) treated with 100ng/ml IFN gamma for 48h (Red) / Untreated HT-29 (Green) cells labelling TAP1 with ab314745 at 1/50 dilution (1 ug)/Red (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.



Immunoprecipitation - Anti-TAP1 antibody [EPR26236-57] (ab314745)

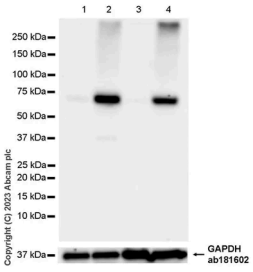
TAP1 was immunoprecipitated from 0.35 mg HT-29 (human colorectal adenocarcinoma epithelial cell) treated with 100ng/ml IFN gamma for 48h whole cell lysate with ab314745 at 1/30 dilution (2ug in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab314745 at 1/1000 dilution. VeriBlot for IP secondary antibody(HRP)(ab131366) was used at 1/5000 dilution. Lane 1: HT-29 (human colorectal adenocarcinoma epithelial cell) treated with 100ng/ml IFN gamma for 48h whole cell lysate Lane 2: ab314745 IP in HT-29 (human colorectal adenocarcinoma epithelial cell) treated with 100ng/ml IFN gamma for 48h whole cell lysate Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab314745 in HT-29 treated with 100ng/ml IFN gamma for 48h whole cell lysate Blocking and dilution buffer and concentration: 5% NFDM/TBST.
All lanes:
Immunoprecipitation - Anti-TAP1 antibody [EPR26236-57] (ab314745) at 1/30 dilution

All lanes:
HT-29 (human colorectal adenocarcinoma epithelial cell) treated with 100ng/ml IFN gamma for 48h whole cell lysate

Secondary

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

Exposure time: 5s



Western blot - Anti-TAP1 antibody [EPR26236-57] (ab314745)

Blocking and diluting buffer and concentration: 5% NFDM/TBST. The expression of TAP1 is upregulated in response to IFN gamma treatment (PMID: 12234057, PMID: 2475232). In Western blot, Anti-GAPDH antibody [EPR16891] - Loading Control (ab181602) staining at 1/200000 dilution.
All lanes:
Western blot - Anti-TAP1 antibody [EPR26236-57] (ab314745) at 1/1000 dilution

Lane 1:
Untreated HT-29 (human colorectal adenocarcinoma epithelial cell) whole cell lysate at 20 µg

Lane 2:
HT-29 treated with /ml IFN gamma for 48h whole cell lysate at 20 µg

Lane 3:
Untreated HeLa (human cervix adenocarcinoma epithelial cell) whole cell lysate at 20 µg

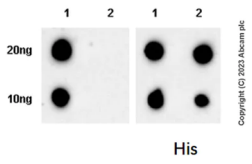
Lane 4:
HeLa treated with 750U/ml IFN gamma for 48h whole cell lysate at 20 µg

Secondary

All lanes:
Western blot - VeriBlot for IP Detection Reagent (HRP) (ab131366) at 1/1000 dilution

Observed band size: 75 kDa

Exposure time: 7s



Dot Blot - Anti-TAP1 antibody [EPR26236-57] (ab314745)

Dot blot analysis of TAP1 using ab314745 at 1:1000 (0.505 ug/ml) followed by a Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated (ab97051) at 1:100,000 dilution. Exposure time: 180 seconds. Blocking and diluting buffer and concentration: 5% NFDM/TBST. This antibody does not cross-react with human TAP2.

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