abcam

ab300137

Anti-MERTK antibody [EPR26359-12] (BSA and Azide free)

Recombinant | RabMAb | KO Validated

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	EPR26359-12
Purification technique	Affinity purification Protein A
Concentration	1.008 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Tested

Species	Human
Dilution info	-

Notes	For Western Blot, it is recommended to use ab52968 for detecting human samples and ab184086 for detecting mouse samples.

Species	Mouse
Dilution info	-
Notes	For Western Blot, it is recommended to use ab52968 for detecting human samples and ab184086 for detecting mouse samples.

Not recommended

Species	Rat
Dilution info	-
Notes	For Western Blot, it is recommended to use ab52968 for detecting human samples and ab184086 for detecting mouse samples.

IHC-P

Tested

Species	Mouse
Dilution info	-
Notes	-

Not recommended

Species	Human, Rat
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Mouse
Dilution info	-
Notes	-

Expected

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

Not recommended

Species	Rat
Dilution info	-
Notes	-

Flow Cyt

Tested

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

IP

Not recommended

Species	Mouse, Human, Rat
Dilution info	-
Notes	-

Target data

See full target information MERTK

Function Receptor tyrosine kinase that transduces signals from the extracellular matrix into the cytoplasm by binding to several ligands including LGALS3, TUB, TULP1 or GAS6. Regulates many physiological processes including cell survival, migration, differentiation, and phagocytosis of apoptotic cells (efferocytosis). Ligand binding at the cell surface induces autophosphorylation of MERTK on its intracellular domain that provides docking sites for downstream signaling molecules. Following activation by ligand, interacts with GRB2 or PLCG2 and induces phosphorylation of MAPK1, MAPK2, FAK/PTK2 or RAC1. MERTK signaling plays a role in various processes such as macrophage clearance of apoptotic cells, platelet aggregation,

cytoskeleton reorganization and engulfment (PubMed:32640697). Functions in the retinal pigment epithelium (RPE) as a regulator of rod outer segments fragments phagocytosis. Also plays an important role in inhibition of Toll-like receptors (TLRs)-mediated innate immune response by activating STAT1, which selectively induces production of suppressors of cytokine signaling SOCS1 and SOCS3.

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C
Aliquoting information	Upon delivery aliquot

Notes

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.

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.

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.

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 MERTK protein also known as c-Mer tyrosine kinase plays a mechanical role as a receptor tyrosine kinase with a mass of approximately 110 kDa. It is expressed in multiple tissues including the retina immune cells and some epithelial cells. MERTK functions by binding with its ligands facilitating downstream signaling that affects cellular functions. The receptor is part of the TAM family alongside proteins like AXL and TYRO3.
Biological function summary	The receptor MERTK orchestrates processes critical for maintaining cellular homeostasis such as efferocytosis and immune response regulation. It does not operate alone but often interacts with other cellular components to form functional complexes. This protein contributes significantly to phagocytosis a cellular process for clearing apoptotic cells ensuring a controlled immune environment.
Pathways	Several signal transduction pathways involve c-Mer tyrosine kinase in maintaining cellular communication. Notably it participates in the RAS/MAPK and PI3K/AKT pathways which are essential for cell survival and proliferation. These pathways involve interactions with proteins such as GAB1 and SOS highlighting the receptor's integration in cell signaling networks.
Associated diseases and disorders	Aberrant activity of MERTK has associations with cancer and autoimmune disorders. In cancers such as leukemia overexpression of the MERTK protein promotes cell survival and proliferation. Its interaction with other proteins like GRB2 can further exacerbate oncogenic pathways. In autoimmune diseases dysregulated MERTK expression can lead to improper clearance of apoptotic cells contributing to systemic inflammation.

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

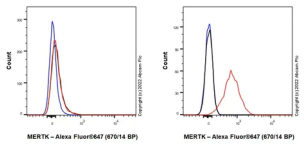
We do not recommend this combination. It is not covered by our product promise.

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.

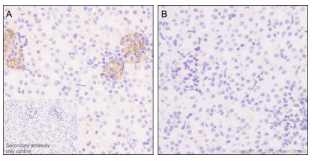
Full details and terms and conditions can be found here:
Terms & Conditions.

12 product images



Flow Cytometry - Anti-MERTK antibody [EPR26359-12] (BSA and Azide free) (ab300137)

Flow cytometric analysis of HL-60 (human acute promyelocytic leukemia promyeloblast, Left) / HepG2 (human hepatocellular carcinoma epithelial cell, Right) cells labelling MERTK with ab300136 at 1/50 dilution (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). A Goat anti-Rabbit IgG (Alexa Fluor® 647, ab150083) at 1/2000 dilution was used as the secondary antibody. Gated on viable cells. Negative control: HL-60 (PMID:23474756).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-MERTK antibody [EPR26359-12] (BSA and Azide free) (ab300137)

MERTK Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-MERTK antibody

This data was developed using ab300136, the same antibody clone in a different buffer formulation.
Immunohistochemical analysis of paraffin-embedded (A) Kidney tissue from wild-type C57BL/6J mice and (B) Kidney tissue from MERTK knockout mice tissue labeling MERTK with ab300136 at 1/1000 dilution.

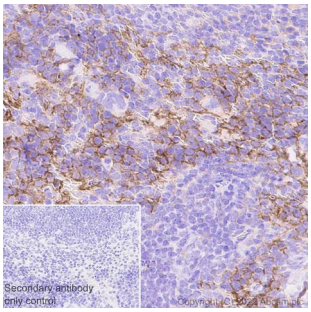
Positive staining on (A) Kidney tissue from wild-type C57BL/6J mice, no staining on (B) Kidney tissue from MERTK knockout mice.

The primary antibody was incubated for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with Hematoxylin.

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

The tissue samples were kindly provided by GemPharmatech. C57BL/6JGpt wildtype mice and MERTK-KO homozygous mice (Strain ID: T012765).

Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).



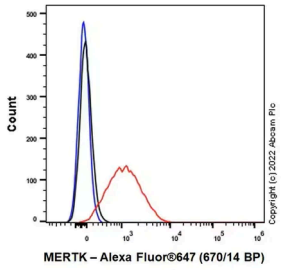
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-MERTK antibody [EPR26359-12] (BSA and Azide free) (ab300137)

MERTK Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of mouse spleen using rabbit Anti-MERTK antibody

This data was developed using ab300136, the same antibody clone in a different buffer formulation.
Immunohistochemical analysis of paraffin-embedded Mouse spleen tissue labelling MERTK with ab300136 at 1/800 followed by a ready to use Goat Anti-Rabbit IgG H&L (HRP polymer). Membranous staining on mouse spleen (PMID: 25479139) is observed. The section was incubated with ab300136 at 4°C overnight. Counterstained with Hematoxylin.

Secondary antibody only control: PBS was used instead of primary antibody, secondary antibody is a ready to use Goat Anti-Rabbit IgG H&L (HRP polymer).

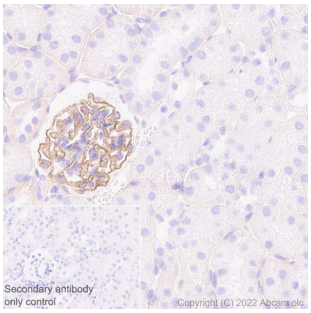
Heat mediated antigen retrieval using ab93684 (Tris/EDTA buffer, pH 9.0)



Flow Cytometry - Anti-MERTK antibody [EPR26359-12] (BSA and Azide free) (ab300137)

This data was developed using ab300136, the same antibody clone in a different buffer formulation.

Flow cytometric analysis of NR8383 (rat lung macrophage alveolar) cells labelling MERTK with ab300136 at 1/50 dilution (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® 647, ab150083) at 1/2000 dilution was used as the secondary antibody. Gated on viable cells.



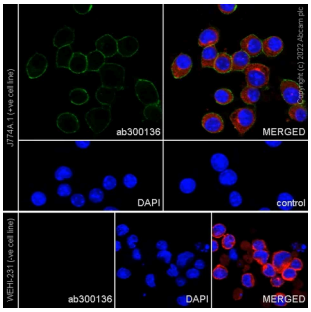
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-MERTK antibody [EPR26359-12] (BSA and Azide free) (ab300137)

MERTK Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-MERTK antibody

This data was developed using ab300136, the same antibody clone in a different buffer formulation.
Immunohistochemical analysis of paraffin-embedded mouse kidney tissue labelling MERTK with ab300136 at 1/800 followed by a ready to use Goat Anti-Rabbit IgG H&L (HRP polymer). Membranous staining on endothelial cells of mouse kidney (PMID: 29350876) is observed. The section was incubated with ab300136 at 4°C overnight. Counterstained with Hematoxylin.

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

Heat mediated antigen retrieval using ab93684 (Tris/EDTA buffer, pH 9.0).



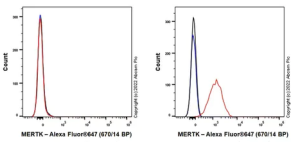
Immunocytochemistry/ Immunofluorescence - Anti-MERTK antibody [EPR26359-12] (BSA and Azide free) (ab300137)

This data was developed using ab300136, the same antibody clone in a different buffer formulation.

Immunofluorescent analysis of 100% methanol-fixed, 0.1% TritonX-100 permeabilized J774A.1(mouse reticulum cell sarcoma monocyte macrophage) cells labeling MERTK with ab300136 at 1/50 dilution, followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preabsorbed antibody at 1/1000 dilution (Green). Confocal image showing membranous staining in J774A.1 cell line. Negative control: WEHI-231(PMID: 16652142; PMID:12884290).

Tubulin is detected with ab195889 Anti-alpha Tubulin mouse monoclonal antibody - Microtubule Marker (Alexa Fluor® 594) at 1/200 dilution (Red). The Nuclear counterstain was DAPI (Blue).

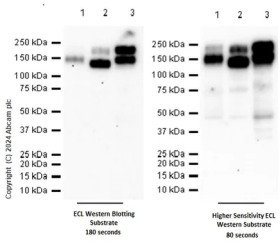
Secondary antibody only control: Secondary antibody is ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preabsorbed at 1/1000 dilution.



Flow Cytometry - Anti-MERTK antibody [EPR26359-12] (BSA and Azide free) (ab300137)

This data was developed using ab300136, the same antibody clone in a different buffer formulation.

Flow cytometric analysis of WEHI-231 (mouse B cell lymphoma B lymphocyte, Left) / J774A.1 (mouse reticulum cell sarcoma monocyte macrophage, Right) cells labelling MERTK with ab300136 at 1/50 dilution (1µg) (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® 647, ab150083) at 1/2000 dilution was used as the secondary antibody. Gated on viable cells.Negative control: WEHI-231(PMID:16652142; PMID:12884290)



Western blot - Anti-MERTK antibody [EPR26359-12] (BSA and Azide free) (ab300137)

Blocking and dilution buffer:5% NFDM /TBST.
Exposure time:ECL western blotting substrate 180 seconds, higher sensitivity ECL western substrate 80 seconds.

The left image uses the ECL western blotting substrate 180 seconds and the right image uses the higher sensitivity ECL western substrate 80 seconds.

We recommend using a higher sensitive ECL substrate to increase the band intensity.

This data was developed using ab300136, the same antibody clone in a different buffer formulation.

All lanes:
Western blot - Anti-MERTK antibody [EPR26359-12] (ab300136) at 1/1000 dilution

Lane 1:
HepG2 (human hepatocellular carcinoma epithelial cell), whole cell lysate at 20 µg

Lane 2:
Mouse spleen tissue lysate at 20 µg

Lane 3:

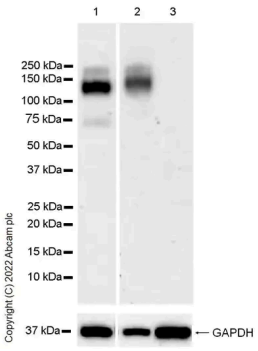
J774A.1 (mouse reticulum cell sarcoma monocyte macrophage), whole cell lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Predicted band size: 110 kDa

Observed band size: 110-140 kDa, 180-210 kDa



Western blot - Anti-MERTK antibody [EPR26359-12] (BSA and Azide free) (ab300137)

MERTK Western blot staining using rabbit Anti-MERTK antibody

This data was developed using ab300136, the same antibody clone in a different buffer formulation.
Blocking and dilution buffer and concentration: 5% NFDM/TBST.

Negative control: HL-60 (PMID:23474756)

The expression profile/ molecular weight observed is consistent with what has been described in the literature (PMID: 16652142).

All lanes:
Western blot - Anti-MERTK antibody [EPR26359-12] (ab300136) at 1/1000 dilution

Lane 1:
Mouse spleen tissue lysate at 20 µg

Lane 2:
HepG2 (human hepatocellular carcinoma epithelial cell) whole cell lysate at 20 µg

Lane 3:
HL-60 (human acute promyelocytic leukemia promyeloblast) whole cell lysate at 20 µg

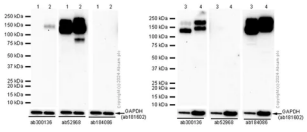
Secondary

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

Developed using the ECL technique.

Observed band size: 110-140 kDa, 180-210 kDa

Exposure time: 3min



Western blot - Anti-MERTK antibody [EPR26359-12] (BSA and Azide free) (ab300137)

This data was developed using ab300136, the same antibody clone in a different buffer formulation. Blocking/Diluting buffer and concentration: 5% NFDM/TBST For Western Blot, it is recommended to use ab52968 for detecting human samples and ab184086 for detecting mouse samples.
All lanes:
Western blot - Anti-MERTK antibody [EPR26359-12] (ab300136) at 1/1000 dilution

Lane 1:
HEK-293 (Human embryonic kidney epithelial cell) whole cell lysate at 20 µg

Lane 2:
HepG2 (Human hepatocellular carcinoma epithelial cell) whole cell lysate at 20 µg

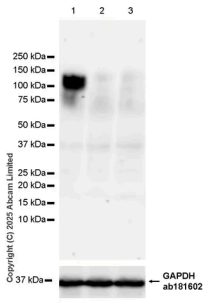
Lane 3:
Mouse spleen tissue lysate at 20 µg

Lane 4:
J774A.1 (Mouse reticulum cell sarcoma monocyte macrophage) whole cell lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Observed band size: 110-140 kDa, 180-210 kDa



Western blot - Anti-MERTK antibody [EPR26359-12] (BSA and Azide free) (ab300137)

MERTK Western blot staining using rabbit Anti-MERTK antibody

This data was developed using ab300136, the same antibody clone in a different buffer formulation.
Blocking and diluting buffer and concentration: 5% NFDM/TBST.

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

The tissue samples were kindly provided by GemPharmatech. C57BL/6JGpt wildtype mice and Mertk-KO homozygous mice (Strain ID: T012765).

All lanes:
Western blot - Anti-MERTK antibody [EPR26359-12] (ab300136) at 1/1000 dilution

Lane 1:
Wild-type mouse kidney tissue lysate at 40 µg

Lane 2:
Mertk knockout mouse kidney (case 1) tissue lysate at 40 µg

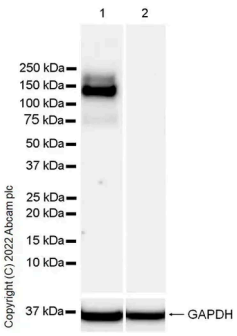
Lane 3:
Mertk knockout mouse kidney (case 2) tissue lysate at 40 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Observed band size: 110-140 kDa

Exposure time: 37s



Western blot - Anti-MERTK antibody [EPR26359-12] (BSA and Azide free) (ab300137)

MERTK Western blot staining using rabbit Anti-MERTK antibody

This data was developed using ab300136, the same antibody clone in a different buffer formulation.
Blocking and dilution buffer and concentration: 5% NFDM/TBST.

Negative control: WEHI-231 (PMID: 12884290).

The expression profile/ molecular weight observed is consistent with what has been described in the literature (PMID: 16652142).

This blot was developed using a higher sensitivity ECL substrate.

All lanes:
Western blot - Anti-MERTK antibody [EPR26359-12] (ab300136) at 1/1000 dilution

Lane 1:
J774A.1 (mouse reticulum cell sarcoma monocyte macrophage) whole cell lysate at 20 µg

Lane 2:
WEHI-231 (mouse B cell lymphoma B lymphocyte) whole cell lysate at 20 µg

Secondary

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

Observed band size: 110-140 kDa, 180-210 kDa

Exposure time: 92s

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