abcam

ab219950

Anti-RICTOR antibody [EPR22008]

Recombinant | RabMAb | KO Validated

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	EPR22008
Purification technique	Affinity purification Protein A
Concentration	0.49 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Tested

Species	Human
Dilution info	1/1000
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/500
Notes	-

Target data

See full target information RICTOR

Function	Component of the mechanistic target of rapamycin complex 2 (mTORC2), which transduces signals from growth factors to pathways involved in proliferation, cytoskeletal organization, lipogenesis and anabolic output (PubMed:15268862, PubMed:15718470, PubMed:19720745, PubMed:19995915, PubMed:21343617, PubMed:33158864, PubMed:35904232, PubMed:35926713). In response to growth factors, mTORC2 phosphorylates and activates AGC protein kinase family members, including AKT (AKT1, AKT2 and AKT3), PKC (PRKCA, PRKCB and PRKCE) and SGK1 (PubMed:19720745, PubMed:19935711, PubMed:19995915). In contrast to mTORC1, mTORC2 is nutrient-insensitive (PubMed:15467718, PubMed:21343617). Within the mTORC2 complex, RICTOR probably acts as a molecular adapter (PubMed:21343617, PubMed:33158864, PubMed:35926713). RICTOR is responsible for the FKBP12-rapamycin-insensitivity of mTORC2 (PubMed:33158864). mTORC2 plays a critical role in AKT1 activation by mediating phosphorylation of different sites depending on the context, such as 'Thr-450', 'Ser-473', 'Ser-477' or 'Thr-479', facilitating the phosphorylation of the activation loop of AKT1 on 'Thr-308' by PDPK1/PDK1 which is a prerequisite for full activation (PubMed:15718470, PubMed:19720745, PubMed:19935711, PubMed:35926713). mTORC2 catalyzes the phosphorylation of SGK1 at 'Ser-422' and of PRKCA on 'Ser-657' (By similarity). The mTORC2 complex also phosphorylates various proteins involved in insulin signaling, such as FBXW8 and IGF2BP1 (By similarity). mTORC2 acts upstream of Rho GTPases to regulate the actin cytoskeleton, probably by activating one or more Rho-type guanine nucleotide exchange factors (PubMed:15467718). mTORC2 promotes the serum-induced formation of stress-fibers or F-actin (PubMed:15467718).

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	RICTOR (Rapamycin-insensitive companion of mTOR) is an important component of the mTOR complex 2 (mTORC2) distinguished by its ability to interact with mTOR (mechanistic target of rapamycin). RICTOR possesses a molecular mass of approximately 192 kDa. You can find RICTOR widely expressed in various tissues including the brain liver and skeletal muscle. Researchers also refer to it as AVO3.
Biological function summary	The protein plays a significant role in cellular growth proliferation and survival. RICTOR forms part of the mTORC2 complex which is important for Akt/PKB phosphorylation. Activation of mTORC2 by RICTOR regulates actin cytoskeleton dynamics and membrane trafficking. This involvement affects the control of cell metabolism and immune responses.
Pathways	RICTOR integrates into the PI3K/Akt signaling pathway influencing cell growth and survival in response to nutrients and growth factors. RICTOR as part of mTORC2 also interacts with proteins such as Sin1 and mLST8 helping regulate PKB/Akt phosphorylation at Ser473. This interaction links RICTOR's function to the insulin signaling pathway which controls aspects of glucose metabolism.
Associated diseases and disorders	The dysregulation of RICTOR plays a role in cancer progression and metabolic disorders. Alterations in the PI3K/Akt/mTOR signaling pathway can lead to the development of various cancers with RICTOR contributing to tumorigenesis through Akt activation. Additionally aberrant RICTOR expression affects insulin signaling therefore connecting it to diabetes. Through these pathways and

conditions RICTOR's interaction with proteins such as mTOR illustrates its relevance in disease mechanisms and therapeutic targets.

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

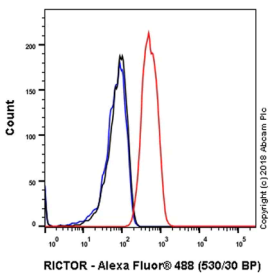
We do not recommend this combination. It is not covered by our product promise.

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.

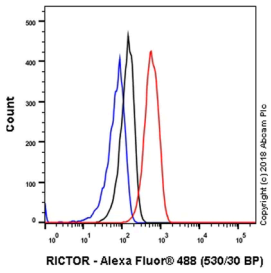
5 product images



Flow Cytometry (Intracellular) - Anti-RICTOR antibody [EPR22008] (ab219950)

RICTOR Flow Cytometry (Intracellular) staining using rabbit Anti-RICTOR antibody

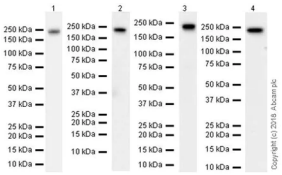
Intracellular flow cytometric analysis of 4% paraformaldehyde-fixed, 90% methanol permeabilized HCT 116 (human colorectal carcinoma cell line) cell line labeling RICTOR with ab219950 at 1/500 (red) compared with a Rabbit monoclonal IgG (ab172730) (black) and an unlabeled control (cells incubated with secondary antibody only) (blue). Goat anti rabbit IgG (Alexa Fluor® 488, ab150077), at 1/2000 dilution was used as the secondary antibody.



Flow Cytometry (Intracellular) - Anti-RICTOR antibody [EPR22008] (ab219950)

RICTOR Flow Cytometry (Intracellular) staining using rabbit Anti-RICTOR antibody

Intracellular flow cytometric analysis of 4% paraformaldehyde-fixed, 90% methanol permeabilized HeLa (human epithelial cell line from cervix adenocarcinoma) cell line labeling RICTOR with ab219950 at 1/500 (red) compared with a Rabbit monoclonal IgG (ab172730) (black) and an unlabeled control (cells incubated with secondary antibody only) (blue). Goat anti rabbit IgG (Alexa Fluor® 488, ab150077), at 1/2000 dilution was used as the secondary antibody.



Western blot - Anti-RICTOR antibody [EPR22008] (ab219950)

RICTOR Western blot staining using rabbit Anti-RICTOR antibody

Blocking/Diluting buffer and concentration: 5% NFDM/TBST.
Exposure times: Lane 1: 3 minutes; Lane 2: 48 seconds; Lane 3-4: 26 seconds.

All lanes:
Western blot - Anti-RICTOR antibody [EPR22008] (ab219950) at 1/1000 dilution

Lane 1:
HCT 116 (Human colorectal carcinoma cell line) whole cell lysate at 10 µg

Lane 2:
MDA-MB-231 (Human breast adenocarcinoma cell line) whole cell lysate at 10 µg

Lane 3:
SW480 (Human colorectal adenocarcinoma cell line) whole cell lysate at 10 µg

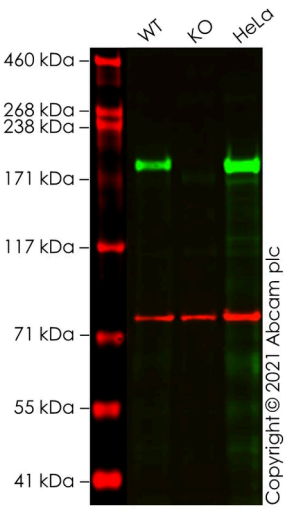
Lane 4:
PC-3 (Human prostate adenocarcinoma cell line) whole cell lysate at 10 µg

Secondary

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

Lanes 2 - 4:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/50000 dilution

Predicted band size: 192 kDa



Western blot - Anti-RICTOR antibody [EPR22008] (ab219950)

RICTOR Western blot staining using rabbit Anti-RICTOR antibody

False colour image of Western blot: Anti-RICTOR antibody [EPR22008] staining at 1/1000 dilution, shown in green; Mouse anti-CANX [CANX/1543] (ab238078) loading control staining at 1/20000 dilution, shown in red. In Western blot, ab219950 was shown to bind specifically to RICTOR. A band was observed at 190 kDa in wild-type A549 cell lysates with no signal observed at this size in RICTOR knockout cell line ab277866 (knockout cell lysate ab288315). To generate this image, wild-type and RICTOR knockout A549 cell lysates were analysed. First, samples were run on an SDS-PAGE gel then transferred onto a nitrocellulose membrane. Membranes were blocked in 3 % milk in TBS-0.1 % Tween® 20 (TBS-T) before incubation with primary antibodies overnight at 4 °C. Blots were washed four times in TBS-T, incubated with secondary antibodies for 1 h at room temperature, washed again four times then imaged. Secondary antibodies used were Goat anti-Rabbit IgG H&L (IRDye® 800CW) preabsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preabsorbed (ab216776) at 1/20000 dilution.
All lanes:
Western blot - Anti-RICTOR antibody [EPR22008] (ab219950) at 1/1000 dilution

Lane 1:
Wild-type A549 cell lysate at 20 µg

Lane 2:
RICTOR knockout A549 cell lysate at 20 µg

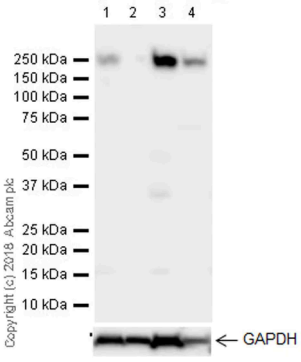
Lane 2:
Western blot - Human RICTOR knockout A549 cell line (ab277866)

Lane 3:
HeLa cell lysate at 20 µg

Performed under reducing conditions.

Predicted band size: 192 kDa

Observed band size: 190 kDa



Western blot - Anti-RICTOR antibody [EPR22008] (ab219950)

Blocking/Diluting buffer and concentration: 5%NFDM/TBST.
Exposure time: 26 seconds.

ab219950 was shown to specifically react with RICTOR in wild-type HAP1 cells as signal was lost in RICTOR knockout cells. Wild-type and RICTOR knockout samples were subjected to SDS-PAGE. ab219950 and ab181602 (Rabbit anti-GAPDH loading control) were incubated 1 hour at room temperature at 1/1000 dilution and 1/200,000 dilution respectively. Blots were developed with Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated (ab97051) secondary antibody at 1/50,000 dilution for 1 hour at room temperature before imaging. The blot was developed on a BIO-RAD® ChemiDoc™ MP instrument using the ECL technique.

All lanes:
Western blot - Anti-RICTOR antibody [EPR22008] (ab219950) at 1/1000 dilution

Lane 1:
Wild-type HAP1 whole cell lysate at 20 µg

Lane 2:
RICTOR knockout HAP1 whole cell lysate at 20 µg

Lane 3:

HeLa (human epithelial cell line from cervix adenocarcinoma) whole cell lysate at 10 µg

Lane 4:
HEK-293 (human epithelial cell line from embryonic kidney) whole cell lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/50000 dilution

Predicted band size: 192 kDa

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