abcam

ab104838

Anti-RICTOR antibody [7B3]

Key facts

Isotype	IgG1
Host species	Mouse
Storage buffer	Preservative: 0.05% Sodium azide Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	Recombinant Fragment Protein within Human RICTOR. The exact immunogen used to generate this antibody is proprietary information. Database link Q6R327
Clone number	7B3
Purification technique	Affinity purification Protein G
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →
Purification notes	Purified from tissue culture supernatant.

Reactivity data

Flow Cyt

Tested

Species	Human
Dilution info	-
Notes	ab170190 - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody.

Expected

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

WB

Tested

Species	Human
Dilution info	1/500 - 1/2000
Notes	-

Expected

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

IHC-P

Tested

Species	Human
Dilution info	1/200 - 1/1000
Notes	-

Expected

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

ICC/IF

Tested

Species	Mouse
Dilution info	1/200 - 1/1000
Notes	-

Expected

Species	Human
Dilution info	Use at an assay dependent concentration.
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	Blue Ice

Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C

Notes

This product was changed from ascites to supernatant. Lot no's high than GR173148-16 are from Tissue Culture Supernatant

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

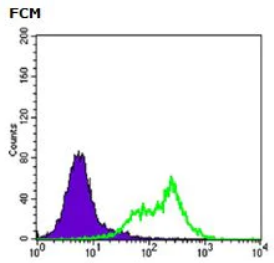
We do not recommend this combination. It is not covered by our product promise.

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.

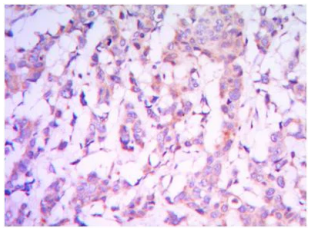
5 product images



Flow Cytometry - Anti-RICTOR antibody [7B3] (ab104838)

RICTOR Flow Cytometry staining using mouse Anti-RICTOR antibody

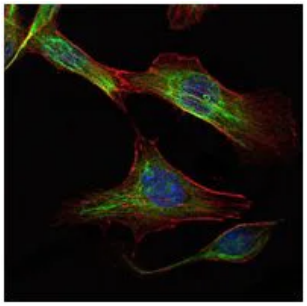
ab104838 used for Flow cytometric analysis of HeLa cells (green). The negative control is shown in purple.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-RICTOR antibody [7B3] (ab104838)

RICTOR Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using mouse Anti-RICTOR antibody

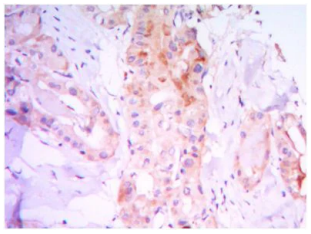
ab104838 at 1/200 dilution staining RICTOR in paraffin-fixed Human breast carcinoma by Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections).



Immunocytochemistry/ Immunofluorescence - Anti-RICTOR antibody [7B3] (ab104838)

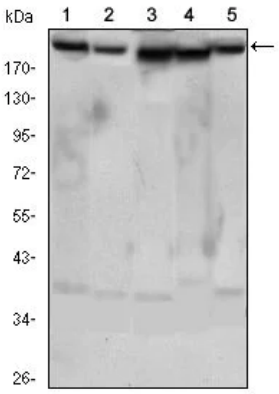
RICTOR Immunocytochemistry/ Immunofluorescence staining using mouse Anti-RICTOR antibody

ab104838 at 1/200 dilution staining RICTOR in NIH3T3 cells (green) by immunofluorescence. DRAQ5 fluorescent DNA dye is shown in blue. Actin filaments have been labeled with Alexa Fluor-555 phalloidin (red).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-RICTOR antibody [7B3] (ab104838)

ab104838 at 1/200 dilution staining RICTOR in paraffin-embedded thyroid gland tissues by Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections).



Western blot - Anti-RICTOR antibody [7B3] (ab104838)

RICTOR Western blot staining using mouse Anti-RICTOR antibody

All lanes:
Western blot - Anti-RICTOR antibody [7B3] (ab104838) at 1/500 dilution

Lane 1:
HeLa cell lysate

Lane 2:
PANC-1 cell lysate

Lane 3:
MOLT4 cell lysate

Lane 4:
HepG2 cell lysate

Lane 5:
HEK293 cell lysate

Predicted band size: 192 kDa

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