abcam

ab249037

Anti-PRAS40 antibody [EPR6263(2)] - 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	EPR6263(2)
Purification technique	Affinity purification Protein A
Concentration	1.024 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	-

Notes	-

Expected

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

WB

Tested

Species	Human, Mouse
Dilution info	-
Notes	-

ICC/IF

Not recommended

Species	Mouse, Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Expected

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

Target data

See full target information AKT1S1

Function	Negative regulator of the mechanistic target of rapamycin complex 1 (mTORC1), an evolutionarily conserved central nutrient sensor that stimulates anabolic reactions and macromolecule biosynthesis to promote cellular biomass generation and growth (PubMed:17277771, PubMed:17386266, PubMed:17510057, PubMed:29236692). In absence of insulin and nutrients, AKT1S1 associates with the mTORC1 complex and directly inhibits mTORC1 activity by blocking the MTOR substrate-recruitment site (PubMed:29236692). In response to insulin and nutrients, AKT1S1 dissociates from mTORC1 (PubMed:17386266, PubMed:18372248). Its activity is dependent on its phosphorylation state and binding to 14-3-3 (PubMed:16174443, PubMed:18372248). May also play a role in nerve growth factor-mediated neuroprotection (By similarity).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C
Storage information	Do Not Freeze

Notes

ab249037 is the carrier-free version of ab151719.

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.

Species reactivity

Rat: We have preliminary internal testing data to indicate this antibody may not react with this species.
Please contact us for more information.

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.

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.

Supplementary info

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

Activity summary	PRAS40 also known as Proline-Rich AKT1 Substrate 40 kDa is a protein that serves a mechanical function as a binding partner within the mTOR complex. This protein with a molecular mass of approximately 40 kDa works within cellular environments to regulate various kinases. PRAS40 expresses ubiquitously but shows significant activity within tissues that have high metabolic roles such as muscle and fat. Its interaction with the mammalian target of rapamycin (mTOR) complex makes it an important component in cellular processes.
Biological function summary	PRAS40 acts as an inhibitory regulator in cellular growth and metabolism. PRAS40 is a part of the mTORC1 complex where it connects with other proteins to modulate the actions of mTOR a central regulator of cellular metabolism. By interacting with the mTORC1 complex PRAS40 can control protein synthesis and cell cycle progression. Furthermore PRAS40 responds to various cellular signals actively contributing to balancing growth factors and nutritional signals in cells.
Pathways	PRAS40 plays a significant role in the mTOR signaling pathway a critical pathway for cell growth and metabolism. PRAS40 regulation within this pathway involves the Akt protein which phosphorylates and modulates PRAS40 activity. Additionally PRAS40 has a connection to insulin signaling pathways where it impacts glucose uptake and energy homeostasis. Through interactions in these pathways PRAS40 balances cellular responses to growth factors and metabolic conditions.
Associated diseases and disorders	PRAS40 shows significant implications in cancer and diabetes. Abnormal regulation of PRAS40 has links to cancer progression due to its role in controlling cell growth via mTOR pathways. Dysregulation in PRAS40 function can enhance cell proliferation and contribute to oncogenesis. Likewise PRAS40 is relevant in diabetes especially through its role in insulin signaling. Imbalances here can disrupt glucose metabolism and exacerbate diabetic conditions. Interactions with proteins such as Akt highlight its potential role in managing these diseases.

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

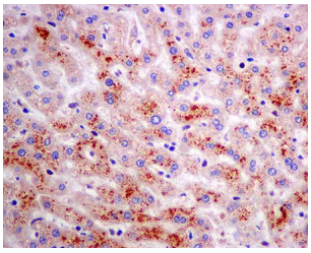
We do not recommend this combination. It is not covered by our product promise.

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.

4 product images

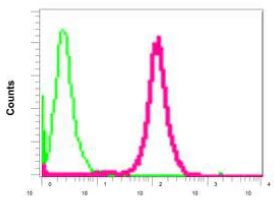


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-PRAS40 antibody [EPR6263(2)] - BSA and Azide free (ab249037)

PRAS40 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-PRAS40 antibody

This data was developed using ab151719, the same antibody clone in a different buffer formulation.
Immunohistochemical analysis of paraffin-embedded Human liver tissue labeling PRAS40 with ab151719 at 1/50 dilution.

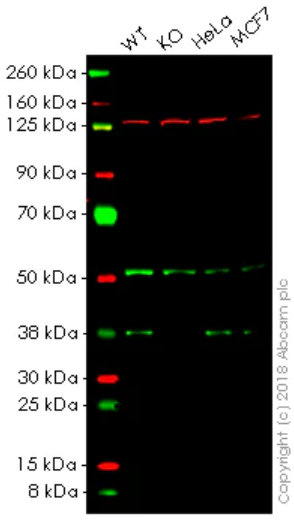
Perform heat mediated antigen retrieval before commencing with IHC staining protocol.



Flow Cytometry (Intracellular) - Anti-PRAS40 antibody [EPR6263(2)] - BSA and Azide free (ab249037)

PRAS40 Flow Cytometry (Intracellular) staining using rabbit Anti-PRAS40 antibody

This data was developed using ab151719, the same antibody clone in a different buffer formulation.
Intracellular flow cytometric analysis of permeabilized 293T cells labeling PRAS40 with ab151719 at 1/10 dilution (red), compared to a nonspecific control antibody (green).



Western blot - Anti-PRAS40 antibody [EPR6263(2)] - BSA and Azide free (ab249037)

PRAS40 Western blot staining using rabbit Anti-PRAS40 antibody

This data was developed using ab151719, the same antibody clone in a different buffer formulation.
Lanes 1 - 4: Merged signal (red and green). Green - ab151719 observed at 27 kDa. Red - loading control, ab130007, observed at 124 kDa.

ab151719 was shown to recognize PRAS40 in wild-type HAP1 cells as signal was lost at the expected MW in AKT1S1 knockout cells. Additional cross-reactive bands were observed in the wild-type and knockout cells. Wild-type and AKT1S1 knockout samples were subjected to SDS-PAGE. ab151719 and ab130007 (Mouse anti-Vinculin loading control) were incubated overnight at 4°C at 1/1000 dilution and 1/20000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preabsorbed ab216773 and Goat anti-Mouse IgG H&L (IRDye® 680RD) preabsorbed ab216776 secondary antibodies at 1/20000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-PRAS40 antibody [EPR6263(2)] (ab151719) at 1/1000 dilution

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

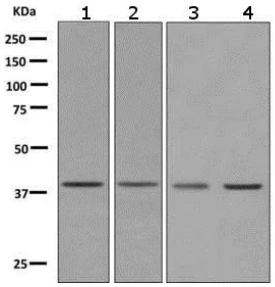
Lane 2:
AKT1S1 knockout HAP1 whole cell lysate at 20 µg

Lane 3:
HeLa whole cell lysate at 20 µg

Lane 4:
MCF-7 whole cell lysate at 20 µg

Predicted band size: 27 kDa

Observed band size: 40 kDa



Western blot - Anti-PRAS40 antibody [EPR6263(2)] - BSA and Azide free (ab249037)

This data was developed using ab151719, the same antibody clone in a different buffer formulation.
All lanes:
Western blot - Anti-PRAS40 antibody [EPR6263(2)] (ab151719) at 1/1000 dilution

Lane 1:
293T cell lysate at 10 µg

Lane 2:
SHSY5Y cell lysate at 10 µg

Lane 3:
HeLa cell lysate at 10 µg

Lane 4:
NIH 3T3 cell lysate at 10 µg

Secondary

All lanes:
Goat anti-rabbit HRP at 1/2000 dilution

Predicted band size: 27 kDa

Observed band size: 40 kDa

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