abcam

ab156004

Anti-AKAP1 antibody [EPR10518]

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	EPR10518
Purification technique	Affinity purification Protein A
Concentration	1.26 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Not recommended

Species	Human
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	1/1000 - 1/10000
Notes	-

IHC-P

Not recommended

Species	Human
Dilution info	-
Notes	-

ICC/IF

Not recommended

Species	Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/100 - 1/500
Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Target data

See full target information AKAP1

Function	Binds to type I and II regulatory subunits of protein kinase A and anchors them to the cytoplasmic face of the mitochondrial outer membrane (By similarity). Involved in mitochondrial-mediated antiviral innate immunity (PubMed:31522117).

Promotes translocation of NDUFS1 into mitochondria to regulate mitochondrial membrane respiratory chain NADH dehydrogenase (Complex I) activity (By similarity).

Storage

Shipped at conditions	Conditional Ambient
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

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

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	A-kinase anchoring protein 1 (AKAP1) also known as AKAP121 or D-AKAP1 is a protein that serves as an anchor point for signaling molecules. AKAP1 is approximately 121 kDa in mass. It is an important player in coordinating cellular processes by anchoring protein kinase A (PKA) to specific cellular compartments such as mitochondria. The protein is mainly expressed in the heart liver and brain but also found in other tissues indicating its broad role in cellular function.

Biological function summary	AKAP1 connects with several components to influence cellular signaling pathways and energy metabolism. It is a part of a complex network that involves mitochondrial targeting sequences which guide proteins to correct mitochondrial compartments. AKAP1 helps regulate processes like mitochondrial dynamics apoptosis and oxidative phosphorylation. These functions ensure efficient cellular energy production and maintenance of cellular health.
Pathways	AKAP1 engages in both the cAMP-dependent and mitochondrial signaling pathways. In the cAMP-dependent pathway AKAP1 interacts with PKA to modulate phosphorylation events that alter cellular responses to external signals. The mitochondrial pathway involves communication with proteins like Drp1 influencing mitochondrial fission and fusion processes. These interactions highlight AKAP1's central role in maintaining cellular energy balance and integrity.
Associated diseases and disorders	Certain pathways involving AKAP1 link closely with neurodegenerative diseases such as Alzheimer's and cardiac disorders. During neurodegeneration AKAP1-related mitochondrial dysfunction can lead to energy deficits and increased oxidative stress contributing to disease progression. Additionally in cardiac health dysregulation of AKAP1 interactions with PKA can affect heart muscle contractility and lead to cardiac anomalies. Understanding these connections offers insights into potential therapeutic avenues for targeting such 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

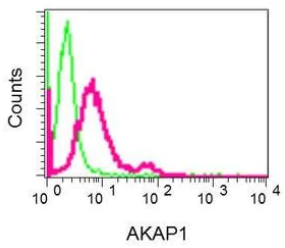
We do not recommend this combination. It is not covered by our product promise.

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.

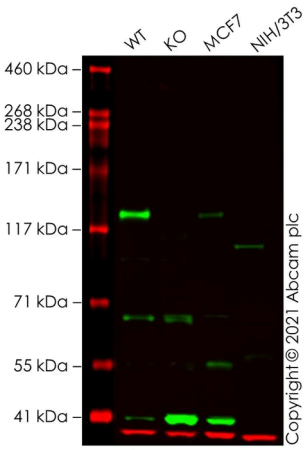
3 product images



Flow Cytometry (Intracellular) - Anti-AKAP1 antibody [EPR10518] (ab156004)

AKAP1 Flow Cytometry (Intracellular) staining using rabbit Anti-AKAP1 antibody

Intracellular flow cytometrical analysis of permeabilized 293T cells with ab156004 antibody at a dilution of 1/100 (red) compared to a negative rabbit IgG (green).



Western blot - Anti-AKAP1 antibody [EPR10518] (ab156004)

AKAP1 Western blot staining using rabbit Anti-AKAP1 antibody

False colour image of Western blot: Anti-AKAP1 antibody [EPR10518] staining at 1/1000 dilution, shown in green; Mouse anti-GAPDH antibody [6C5] (ab8245) loading control staining at 1/20000 dilution, shown in red. In Western blot, ab156004 was shown to bind specifically to AKAP1. A band was observed at 125 kDa in wild-type HEK-293T cell lysates with no signal observed at this size in AKAP1 knockout cell line ab266182 (knockout cell lysate ab257828). To generate this image, wild-type and AKAP1 knockout HEK-293T cell lysates were analysed. First, samples were run on an SDS-PAGE gel then transferred onto a nitrocellulose membrane. Membranes were blocked in fluorescent western blot (TBS-based) blocking solution 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-AKAP1 antibody [EPR10518] (ab156004) at 1/1000 dilution

Lane 1:
Wild-type HEK-293T cell lysate at 20 µg

Lane 2:
AKAP1 knockout HEK-293T cell lysate at 20 µg

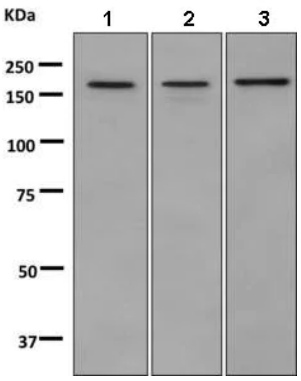
Lane 3:
MCF7 cell lysate at 20 µg

Lane 4:
NIH/3T3 cell lysate at 20 µg

Performed under reducing conditions.

Predicted band size: 97 kDa

Observed band size: 125 kDa



Western blot - Anti-AKAP1 antibody [EPR10518] (ab156004)

All lanes:
Western blot - Anti-AKAP1 antibody [EPR10518] (ab156004) at 1/1000 dilution

Lane 1:
SW480 cell lysate at 10 µg

Lane 2:
Caco-2 cell lysate at 10 µg

Lane 3:
293T cell lysate at 10 µg

Secondary

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

Predicted band size: 97 kDa

Observed band size: 149 kDa

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