abcam

ab151720

Anti-Alpha1-adaptin antibody [EPR7572]

Recombinant | RabMAb

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	EPR7572
Purification technique	Affinity purification Protein A
Concentration	1.239 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	1/50 - 1/100
Notes	Perform heat-mediated antigen retrieval before commencing with IHC staining protocol.

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

IP

Not recommended

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

WB

Tested

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

Predicted

Species	Mouse, Rat
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.

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

Target data

See full target information AP2A1

Function	Component of the adaptor protein complex 2 (AP-2). Adaptor protein complexes function in protein transport via transport vesicles in different membrane traffic pathways. Adaptor protein complexes are vesicle coat components and appear to be involved in cargo selection and vesicle formation. AP-2 is involved in clathrin-dependent endocytosis in which cargo proteins are incorporated into vesicles surrounded by clathrin (clathrin-coated vesicles, CCVs) which are destined for fusion with the early endosome. The clathrin lattice serves as a mechanical scaffold but is itself unable to bind directly to membrane components. Clathrin-associated adaptor protein (AP) complexes which can bind directly to both the clathrin lattice and to the lipid and protein components of membranes are considered to be the major clathrin adaptors contributing the CCV formation. AP-2 also serves as a cargo receptor to selectively sort the membrane proteins involved in receptor-mediated endocytosis. AP-2 seems to play a role in the recycling of synaptic vesicle membranes from the presynaptic surface. AP-2 recognizes Y-X-X-[FILMV] (Y-X-X-Phi) and [ED]-X-X-X-L-[LI] endocytosis signal motifs within the cytosolic tails of transmembrane cargo molecules. AP-2 may also play a role in maintaining normal post-endocytic trafficking through the ARF6-regulated, non-clathrin pathway. During long-term potentiation in hippocampal neurons, AP-2 is responsible for the endocytosis of ADAM10 (PubMed:23676497). The AP-2 alpha subunit binds polyphosphoinositide-containing lipids, positioning AP-2 on the membrane. The AP-2 alpha subunit acts via its C-terminal appendage domain as a scaffolding platform for endocytic accessory proteins. The AP-2 alpha and AP-2 sigma subunits are thought to contribute to the recognition of the [ED]-X-X-X-L-[LI] motif (By similarity).

Storage

Shipped at conditions	Conditional Ambient
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C

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	Alpha1-adaptin also known as ADTAA or AP2A1 is an essential component of the adaptor protein complex 2 (AP-2). It has a mass of approximately 108 kDa. This protein is primarily expressed in the cytoplasm of eukaryotic cells facilitating the assembly of clathrin-coated vesicles. Alpha1-adaptin interacts with clathrin and cargo receptor proteins acting mechanically to mediate vesicle formation and endocytosis. Its role spans across various cell types due to its involvement in cellular uptake processes.
Biological function summary	Alpha1-adaptin plays an important role in regulating endocytosis by assisting the AP-2 complex in selecting and concentrating specific cargo molecules for inclusion in vesicles. This complex is essential for internalizing membrane proteins and lipids at the plasma membrane. The AP-2 complex where Alpha1-adaptin acts as a component interacts with other proteins like clathrin and various membrane receptors ensuring proper cellular distribution of nutrients and signaling molecules.
Pathways	Alpha1-adaptin is critical in endocytic and trafficking pathways. It associates with proteins such as clathrin and AP-2 complex components which are involved in mediating the endocytic pathway. Alpha1-adaptin assumes a critical role in receptor-mediated endocytosis working alongside other adaptin families. Additionally it is involved in actin cytoskeleton dynamics influencing intracellular transport and cellular signaling pathways.
Associated diseases and disorders	Alpha1-adaptin's function links to conditions like neurodegenerative diseases and cancer. It interacts with proteins involved in pathological processes such as the epidermal growth factor receptor (EGFR) in cancer which undergoes deregulation and faulty endocytosis. Furthermore defects in alpha-adaptin function may contribute to neurodevelopmental disorders due to impaired synaptic vesicle recycling and neurotransmitter regulation. The AP-2 complex including Alpha1-adaptin is therefore a significant player in understanding the molecular mechanisms of these disease processes.

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

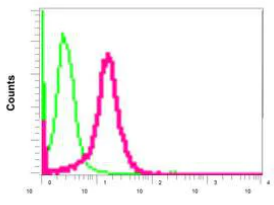
We do not recommend this combination. It is not covered by our product promise.

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.

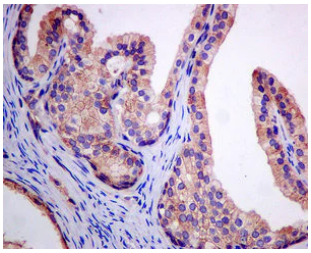
4 product images



Flow Cytometry (Intracellular) - Anti-Alpha1-adaptin antibody [EPR7572] (ab151720)

Alpha1-adaptin Flow Cytometry (Intracellular) staining using rabbit Anti-Alpha1-adaptin antibody

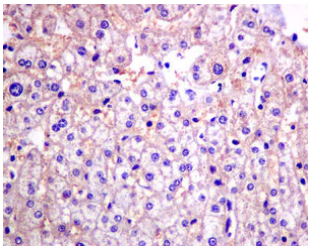
Intracellular flow cytometric analysis of permeabilized HeLa cells labeling alpha Adaptin with ab151720 at 1/100 diluton (red), compared to a nonspecific control antibody (green).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Alpha1-adaptin antibody [EPR7572] (ab151720)

Alpha1-adaptin Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Alpha1-adaptin antibody

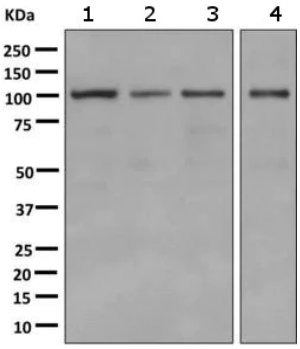
Immunohistochemical analysis of paraffin-embedded Human prostate tissue labeling alpha Adaptin with ab151720 at 1/50 dilution.
Perform heat mediated antigen retrieval before commencing with IHC staining protocol.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Alpha1-adaptin antibody [EPR7572] (ab151720)

Alpha1-adaptin Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Alpha1-adaptin antibody

Immunohistochemical analysis of paraffin-embedded Human liver tissue labeling alpha Adaptin with ab151720 at 1/50 dilution.
Perform heat mediated antigen retrieval before commencing with IHC staining protocol.



Western blot - Anti-Alpha1-adaptin antibody [EPR7572] (ab151720)

All lanes:
Western blot - Anti-Alpha1-adaptin antibody [EPR7572] (ab151720) at 1/1000 dilution

Lane 1:
HeLa cell lysate at 10 µg

Lane 2:
293T cell lysate at 10 µg

Lane 3:
HepG2 cell lysate at 10 µg

Lane 4:
A431 cell lysate at 10 µg

Secondary

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

Predicted band size: 108 kDa

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