abcam

ab181046

Anti-Importin4/Imp4 antibody [EPR13660]

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	EPR13660
Purification technique	Affinity purification Protein A
Concentration	0.109 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, heat up to 98°C, below boiling, and then let cool for 10-20 min, before commencing with IHC staining.

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

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

IP

Tested

Species	Human
Dilution info	1/10 - 1/100
Notes	-

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	1/10000 - 1/50000
Notes	-

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/50 - 1/100
Notes	-

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/10 - 1/100
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 IPO4

Function Nuclear transport receptor that mediates nuclear import of proteins, such as histones, RPS3A, TNP2 and VDR (PubMed:11823430, PubMed:16207705, PubMed:17682055, PubMed:21454524, PubMed:30177573). Serves as receptor for nuclear localization signals (NLS) in cargo substrates (PubMed:11823430, PubMed:16207705). Is thought to mediate docking of the importin/substrate complex to the nuclear pore complex (NPC) through binding to nucleoporin and

the complex is subsequently translocated through the pore by an energy requiring, Ran-dependent mechanism (PubMed:11823430, PubMed:16207705). At the nucleoplasmic side of the NPC, Ran binds to the importin, the importin/substrate complex dissociates and importin is re-exported from the nucleus to the cytoplasm where GTP hydrolysis releases Ran (PubMed:11823430). The directionality of nuclear import is thought to be conferred by an asymmetric distribution of the GTP- and GDP-bound forms of Ran between the cytoplasm and nucleus (PubMed:11823430). Mediates the nuclear import of the histone H3-H4 dimer when in complex with ASF1 (ASF1A or ASF1B) (PubMed:21454524, PubMed:29408485, PubMed:36103578). Also mediates the nuclear import of monomeric histones H3.1 and H4 (PubMed:30177573). Mediates the ligand-independent nuclear import of vitamin D receptor (VDR) (PubMed:16207705). In vitro, mediates the nuclear import of human cytomegalovirus UL84 by recognizing a non-classical NLS (PubMed:12610148).

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	Importin4 (Imp4) also known as Ipo4 is a nuclear import receptor with an approximate mass of 130 kDa. This protein facilitates the transport of molecules such as ribosomal proteins and histones into the nucleus. Expression of Importin4 occurs in various tissues including the brain testis and liver. Importin4 plays a significant mechanical role by recognizing nuclear localization signals on cargo molecules and mediating their translocation across the nuclear envelope.
Biological function summary	Importin4 functions as part of the nuclear transport system a complex network essential for cellular operations. Importin4 interacts with the nuclear pore complex to enable import of specific protein cargo into the nucleus. By partnering with karyopherins and Ran-GTPase Importin4 participates in the active transport mechanism ensuring the correct localization of proteins that are critical to genomic regulation processes.
Pathways	Importin4 plays a role in the nuclear transport pathway and is associated with the ribosome biogenesis pathway. This protein works alongside proteins like Ran-GTPase enhancing the translocation of ribosomal components pivotal for cellular growth and protein synthesis. Importin4 also aids in the shuttling of histones which are essential to chromatin assembly and DNA transcription regulation.
Associated diseases and disorders	Importin4 has connections to cancer and neurodegenerative diseases. Altered expression and mutations in Importin4 may disrupt cellular homeostasis and nuclear transport linking it to tumorigenesis. Additionally associations with proteins such as karyopherin alpha importers indicate its involvement in pathological states affecting the nervous system potentially contributing to conditions such as Alzheimer's disease. Understanding Importin4's interactions could provide insights into these complex 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

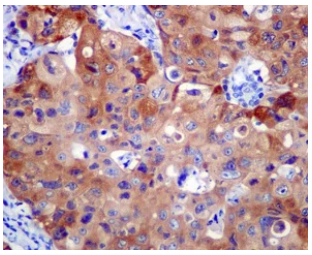
We do not recommend this combination. It is not covered by our product promise.

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.

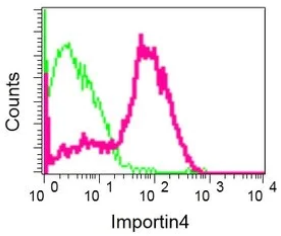
7 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Importin4/Imp4 antibody [EPR13660] (ab181046)

Importin4/Imp4 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Importin4/Imp4 antibody

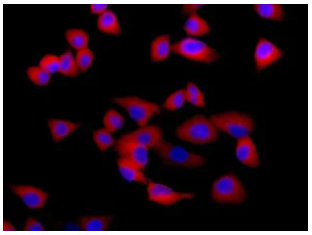
Immunohistochemical analysis of paraffin-embedded Human breast carcinoma tissue labeling Importin4/Imp4 using ab181046 at a 1/50 dilution.
Perform heat mediated antigen retrieval before commencing with IHC staining protocol.



Flow Cytometry (Intracellular) - Anti-Importin4/Imp4 antibody [EPR13660] (ab181046)

Importin4/Imp4 Flow Cytometry (Intracellular) staining using rabbit Anti-Importin4/Imp4 antibody

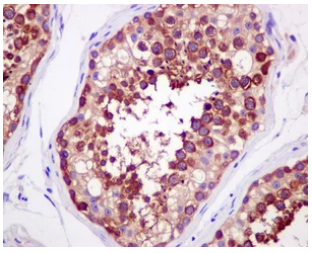
Intracellular flow cytometric analysis of permeabilized HepG2 cells labeling Importin4/Imp4 using ab181046 at a 1/10 dilution (red) or a rabbit IgG control (green).



Immunocytochemistry/ Immunofluorescence - Anti-Importin4/Imp4 antibody [EPR13660] (ab181046)

Importin4/Imp4 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Importin4/Imp4 antibody

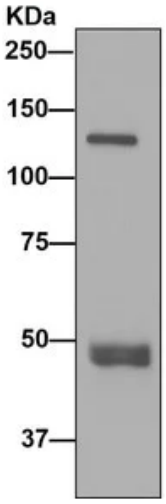
Immunofluorescent staining of A549 cells labeling Importin4/Imp4 using ab181046 at a 1/50 dilution (red) and DAPI nuclear staining (blue).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Importin4/Imp4 antibody [EPR13660] (ab181046)

Importin4/Imp4 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Importin4/Imp4 antibody

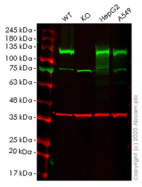
Immunohistochemical analysis of paraffin-embedded Human testis tissue labeling Importin4/Imp4 using ab181046 at a 1/50 dilution.
Perform heat mediated antigen retrieval before commencing with IHC staining protocol.



Immunoprecipitation - Anti-Importin4/Imp4 antibody [EPR13660] (ab181046)

Western blot analysis on immunoprecipitation pellet from HepG2 cell lysate labelling Importin4/Imp4 immunoprecipitated using ab181046 at a 1/10 dilution.
All lanes:
Immunoprecipitation - Anti-Importin4/Imp4 antibody [EPR13660] (ab181046)

Predicted band size: 119 kDa



Western blot - Anti-Importin4/Imp4 antibody [EPR13660] (ab181046)

Importin4/Imp4 Western blot staining using rabbit Anti-Importin4/Imp4 antibody

Lanes 1-4: Merged signal (red and green). Green - ab181046 observed at 130 kDa. Red - loading control ab8245 observed at 36 kDa.
ab181046 Anti-Importin4/Imp4 antibody [EPR13660] was shown to specifically react with Importin4/Imp4 in wild-type HEK293T cells. Loss of signal was observed when knockout cell line ab266175 (knockout cell lysate ab258005) was used. Wild-type and Importin4/Imp4 knockout samples were subjected to SDS-PAGE. ab181046 and Anti-GAPDH antibody [6C5] - Loading Control (ab8245) were incubated overnight at 4°C at 1 in 1000 dilution and 1 in 20000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preadsorbed (ab216776) secondary antibodies at 1 in 20000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-Importin4/Imp4 antibody [EPR13660] (ab181046) at 1/1000 dilution

Lane 1:
Wild-type HEK293T cell lysate at 20 µg

Lane 2:
IPO4 knockout HEK293T cell lysate at 20 µg

Lane 2:
Western blot - Human IPO4 (Importin4/Imp4) knockout HEK-293T cell line (ab266175)

Lane 3:
HepG2 cell lysate at 20 µg

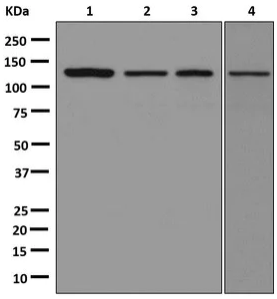
Lane 4:
A549 cell lysate at 20 µg

Secondary

All lanes:
Western blot - Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed (ab216773) at 1/10000 dilution

Predicted band size: 119 kDa

Observed band size: 130 kDa



Western blot - Anti-Importin4/Imp4 antibody [EPR13660] (ab181046)

All lanes:
Western blot - Anti-Importin4/Imp4 antibody [EPR13660] (ab181046) at 1/100000 dilution

Lane 1:
HepG2 cell lysate at 10 µg

Lane 2:
HeLa cell lysate at 10 µg

Lane 3:
A549 cell lysate at 10 µg

Lane 4:
Human seminoma lysate at 10 µg

Predicted band size: 119 kDa

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