abcam

ab250306

Anti-Importin4/Imp4 antibody [EPR13660] - 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	EPR13660
Purification technique	Affinity purification

Reactivity data

IP

Expected

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

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	-
Notes	-

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

IHC-P

Expected

Species	Human
Dilution info	-
Notes	Perform heat mediated antigen retrieval, heat up to 98 degrees C, below boiling, and then let cool for 10-20 min, before commencing with IHC staining.

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

ICC/IF

Expected

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

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

Flow Cyt (Intra)

Expected

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

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

Notes

ab250306 is the carrier-free version of ab181046.

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.

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	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

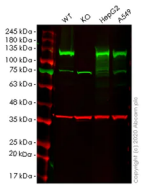
We do not recommend this combination. It is not covered by our product promise.

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.

1 product image



Western blot - Anti-Importin4/Imp4 antibody [EPR13660] - BSA and Azide free (ab250306)

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

This data was developed using the same antibody clone in a different buffer formulation (ab181046).
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

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