abcam

ab248256

Anti-Exportin-5 antibody [EPR8452] - BSA and Azide free

Recombinant | RabMAb

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	EPR8452
Purification technique	Affinity purification Protein A
Dissociation constant	3.64 x 10^{-11} M

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	-
Notes	-

Expected

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

IP

Not recommended

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	-
Notes	-

Expected

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

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Expected

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

Target data

See full target information XPO5

Function	Mediates the nuclear export of proteins bearing a double-stranded RNA binding domain (dsRBD) and double-stranded RNAs (cargos). XPO5 in the nucleus binds cooperatively to the RNA and to the GTPase Ran in its active GTP-bound form. Proteins containing dsRBDs can associate with this trimeric complex through the RNA. Docking of this complex to the nuclear pore complex (NPC) is mediated through binding to nucleoporins. Upon transit of a nuclear export complex into the cytoplasm, hydrolysis of Ran-GTP to Ran-GDP (induced by RANBP1 and RANGAP1, respectively) cause disassembly of the complex and release of the cargo from the export receptor. XPO5 then returns to the nuclear compartment by diffusion through the nuclear pore complex, to mediate another round of transport. The directionality of nuclear export is thought to be conferred by an asymmetric distribution of the GTP- and GDP-bound forms of Ran between the cytoplasm and nucleus. Overexpression may in some circumstances enhance RNA-mediated gene silencing (RNAi). Mediates nuclear export of isoform 5 of ADAR/ADAR1 in a RanGTP-dependent manner. Mediates the nuclear export of micro-RNA precursors, which form short hairpins (PubMed:14631048, PubMed:14681208, PubMed:15613540). Also mediates the nuclear export of synthetic short hairpin RNAs used for RNA interference. In some circumstances can also mediate the nuclear export of deacylated and aminoacylated tRNAs. Specifically recognizes dsRNAs that lack a 5'-overhang in a sequence-independent manner, have only a short 3'-overhang, and that have a double-stranded length of at least 15 base-pairs (PubMed:19965479). Binding is dependent on Ran-GTP (PubMed:19965479). (Microbial infection) Mediates the nuclear export of adenovirus VA1 dsRNA.

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

ab248256 is the carrier-free version of ab129006.

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	Exportin-5 also known as Exp5 and eXportin-5 serves a mechanical role in the cellular export of specific RNA molecules from the nucleus to the cytoplasm. This protein belongs to the karyopherin family and has an approximate molecular mass of about 130 kDa. Exportin-5 primarily expresses in cell types where RNA processing and regulation are actively important though specific distribution patterns vary across different tissues.
Biological function summary	Exportin-5 functions by specifically recognizing and binding to pre-microRNA and small nuclear RNA facilitating their transport out of the nucleus. It operates as a part of a complex with RanGTP which ensures that the RNA cargo is correctly recognized and loaded for transport. This export process is essential for the subsequent RNA maturation and ultimately influences gene expression regulation.

Pathways	While Exportin-5 plays a pivotal role in the RNA transport pathway it is also intricately linked to the microRNA biogenesis pathway. Within these pathways Exportin-5 works closely with RanGTP to mediate the nuclear export of pre-microRNAs setting the stage for their maturation into functional microRNAs in the cytoplasm. It also relates to proteins involved in the RNA-induced silencing complex (RISC) assembly as mature microRNAs are integral parts of RISC.
Associated diseases and disorders	Exportin-5 appears to be linked to tumorigenesis and certain viral infections. Abnormalities in its function may disrupt microRNA export which can lead to dysregulation of gene expression and contribute to cancer development. Furthermore associations with proteins such as Dicer and RISC-related factors highlight its role in antiviral responses where the microRNA pathway can be modulated by viral mechanisms to evade host defenses.

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

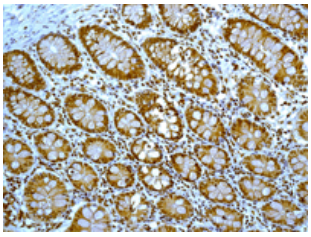
We do not recommend this combination. It is not covered by our product promise.

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

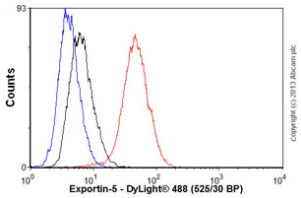


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Exportin-5 antibody [EPR8452] - BSA and Azide free (ab248256)

Exportin-5 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Exportin-5 antibody

This data was developed using ab129006, the same antibody clone in a different buffer formulation.
ab129006, at 1/250 dilution, staining Exportin-5 in paraffin-embedded Human colon tissue by Immunohistochemistry.

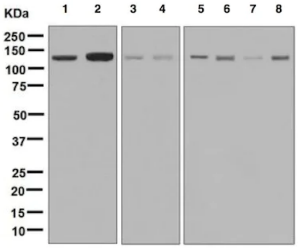
Perform heat mediated antigen retrieval before commencing with IHC staining protocol.



Flow Cytometry (Intracellular) - Anti-Exportin-5 antibody [EPR8452] - BSA and Azide free (ab248256)

Exportin-5 Flow Cytometry (Intracellular) staining using rabbit Anti-Exportin-5 antibody

This data was developed using ab129006, the same antibody clone in a different buffer formulation.
Overlay histogram showing HEK293 cells stained with ab129006 (red line). The cells were fixed with 4% paraformaldehyde (10 min) and then permeabilized with 0.1% PBS-Tween for 20 min. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions followed by the antibody (ab129006, 1/1000 dilution) for 30 min at 22°C. The secondary antibody used was DyLight® 488 goat anti-rabbit IgG (H+L) (ab96899) at 1/500 dilution for 30 min at 22°C. Isotype control antibody (black line) was rabbit IgG (monoclonal) (0.1µg/1x10^6 cells) used under the same conditions. Unlabelled sample (blue line) was also used as a control. Acquisition of >5,000 events were collected using a 20mW Argon ion laser (488nm) and 525/30 bandpass filter. This antibody gave a positive signal in HEK293 cells fixed with 80% methanol (5 min)/permeabilized with 0.1% PBS-Tween for 20 min used under the same conditions.



Western blot - Anti-Exportin-5 antibody [EPR8452] - BSA and Azide free (ab248256)

This data was developed using ab129006, the same antibody clone in a different buffer formulation.
All lanes:
Western blot - Anti-Exportin-5 antibody [EPR8452] (ab129006) at 1/1000 dilution

Lane 1:
HeLa cell lysate at 10 µg

Lane 2:
K562 cell lysate at 10 µg

Lane 3:
Human fetal heart tissue lysate at 10 µg

Lane 4:
Human fetal brain tissue lysate at 10 µg

Lane 5:
C6 cell lysate at 10 µg

Lane 6:
RAW 264.7 cell lysate at 10 µg

Lane 7:
PC-12 cell lysate at 10 µg

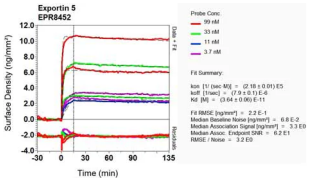
Lane 8:
NIH/3T3 cell lysate at 10 µg

Secondary

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

Predicted band size: 136 kDa

Observed band size: 136 kDa



OI-RD Scanning - Anti-Exportin-5 antibody [EPR8452] - BSA and Azide free (ab248256)

We have systematically measured KD (the equilibrium dissociation constant between the antibody and its antigen), of more than 840 recombinant antibodies to assess not only their individual KD values but also to see the average affinity of antibody. Based on the comparison with published literature values for mouse monoclonal antibodies, Recombinant antibodies appear to be on average 1-2 order of magnitude higher affinity.

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