abcam

ab57491

Anti-Exportin-5 antibody [2C5-1B3]

Key facts

Isotype	IgG1
Host species	Mouse
Storage buffer	pH: 7.4
Form	Liquid
Clonality	Monoclonal
Immunogen	Recombinant Full Length Protein corresponding to Human XPO5. Database link Q9HAV4
Clone number	2C5-1B3
Purity	Tissue culture supernatant
Light chain type	kappa
Purification notes	Purified from TCS.

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	-
Notes	-

IP

Tested

Species	Human
Dilution info	-
Notes	-

Flow Cyt

Tested

Species	Human
Dilution info	-
Notes	ab170190 - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody.

WB

Tested

Species	Human
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	-
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	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Notes

This product was changed from ascites to tissue culture supernatant on 15 May 2019. Please note that the dilutions may need to be adjusted accordingly. If you have any questions, please do not hesitate to contact our scientific support team.

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

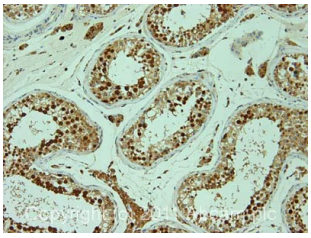
We do not recommend this combination. It is not covered by our product promise.

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:

4 product images



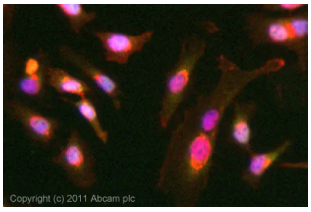
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Exportin-5 antibody [2C5-1B3] (ab57491)

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

IHC image of ab57491 staining in normal human testis formalin fixed paraffin embedded tissue section, performed on a Leica Bond™ system using the standard protocol F. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH6, epitope retrieval solution 1) for 20 mins. The section was then incubated with ab57491, 5µg/ml, for 15 mins at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX.

For other IHC staining systems (automated and non-automated) customers should optimize variable parameters such as antigen retrieval conditions, primary antibody concentration and antibody incubation times.

This image was generated using the ascites version of the product.

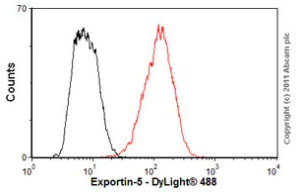


Immunocytochemistry/ Immunofluorescence - Anti-Exportin-5 antibody [2C5-1B3] (ab57491)

Exportin-5 Immunocytochemistry/ Immunofluorescence staining using mouse Anti-Exportin-5 antibody

ICC/IF image of ab57491 stained HeLa cells. The cells were 4% formaldehyde (10 min) and then incubated in 1%BSA / 10% normal goat serum / 0.3M glycine in 0.1% PBS-Tween for 1h to permeabilise the cells and block non-specific protein-protein interactions. The cells were then incubated with the antibody (ab57491, 10µg/ml) overnight at +4°C. The secondary antibody (green) was ab96879 Dylight 488 goat anti-mouse IgG (H+L) used at a 1/250 dilution for 1h. Alexa Fluor® 594 WGA was used to label plasma membranes (red) at a 1/200 dilution for 1h. DAPI was used to stain the cell nuclei (blue) at a concentration of 1.43µM.

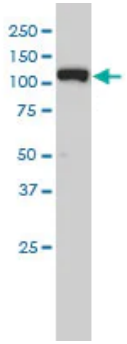
This image was generated using the ascites version of the product.



Flow Cytometry - Anti-Exportin-5 antibody [2C5-1B3] (ab57491)

Exportin-5 Flow Cytometry staining using mouse Anti-Exportin-5 antibody

Overlay histogram showing HEK293 cells stained with ab57491 (red line). The cells were fixed with 80% methanol (5 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 (ab57491, 1µg/1x10^6 cells) for 30 min at 22°C. The secondary antibody used was DyLight® 488 goat anti-mouse IgG (H+L) (ab96879) at 1/500 dilution for 30 min at 22°C. Isotype control antibody (black line) was mouse IgG1 [ICIGG1] (ab91353, 2µg/1x10^6 cells) used under the same conditions. Acquisition of >5,000 events was performed. This image was generated using the ascites version of the product.



Western blot - Anti-Exportin-5 antibody [2C5-1B3] (ab57491)

Exportin-5 Western blot staining using mouse Anti-Exportin-5 antibody

Exportin-5 antibody (ab57491) at 1ug/lane + HeLa cell lysate at 25ug/lane.
This image was generated using the ascites version of the product.

All lanes:
Western blot - Anti-Exportin-5 antibody [2C5-1B3] (ab57491)

Predicted band size: 136 kDa

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