abcam

ab245212

Anti-SEC23B antibody [EPR22723-24]

Recombinant | RabMAb | 20ul selling size

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	EPR22723-24
Purification technique	Affinity purification Protein A
Concentration	0.477 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Tested

Species	Mouse
Dilution info	1/30
Notes	-

Not recommended

Species	Transfected cell lysate, Human, Rat
Dilution info	-
Notes	-

WB

Tested

Species	Transfected cell lysate
Dilution info	1/1000
Notes	-

Species	Mouse
Dilution info	1/1000
Notes	-

Not recommended

Species	Human, Rat
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Mouse
Dilution info	1/50
Notes	-

Not recommended

Species	Transfected cell lysate, Human, Rat
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Mouse
Dilution info	1/500
Notes	-

Not recommended

Species	Transfected cell lysate, Human, Rat
Dilution info	-
Notes	-

IHC-P

Tested

Species	Mouse
Dilution info	1/1000
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Not recommended

Species	Human
Dilution info	-
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Species	Rat
Dilution info	-
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Species	Transfected cell lysate
Dilution info	-

Notes	-

Target data

See full target information Sec23b

Function	Component of the coat protein complex II (COPII) which promotes the formation of transport vesicles from the endoplasmic reticulum (ER). The coat has two main functions, the physical deformation of the endoplasmic reticulum membrane into vesicles and the selection of cargo molecules for their transport to the Golgi complex.

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	SEC23B also known as Protein Transport Protein Sec23B is a component of the coat protein complex II (COPII) which mediates transport from the endoplasmic reticulum to the Golgi apparatus. SEC23B weighs approximately 88 kDa and acts as a GTPase activating protein that regulates the COPII complex assembly. SEC23B broadly expresses in many tissues including high levels in the pancreas and liver suggesting its essential role in cellular transport processes.
Biological function summary	SEC23B functions in vesicular trafficking within cells. In the COPII complex it interacts with SEC24 proteins to form a structural framework critical for cargo selection and vesicle budding. SEC23B does not work alone and is part of a larger protein complex that includes SEC24 SAR1 and SEC13/31 which facilitates proper vesicle formation and trafficking. These interactions enable cells to accurately and efficiently transport necessary proteins and lipids through the secretory pathway.
Pathways	SEC23B is essential in the ER-to-Golgi transport pathway and plays a significant role in maintaining protein homeostasis. The secretory pathway requires SEC23B to cooperate with other proteins like SEC24C and SEC31A ensuring that cargo proteins are correctly packaged and delivered to their destination within the cell. This process is vital for the function of other pathways such as the unfolded protein response as it prevents the accumulation of misfolded proteins in the endoplasmic reticulum.
Associated diseases and disorders	SEC23B mutations have links to Congenital Dyserythropoietic Anemia type II (CDA II) which manifests as ineffective erythropoiesis and improper glycosylation of red blood cell membrane proteins. SEC23B is also associated with pancreatic dysfunctions considering its high expression in the tissue although detailed mechanisms are less understood. In CDA II SEC23B's dysfunction affects its interaction with associated proteins like SEC24B disrupting normal vesicular trafficking and functional erythrocyte production.

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

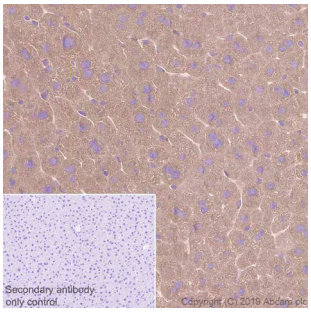
We do not recommend this combination. It is not covered by our product promise.

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.

8 product images

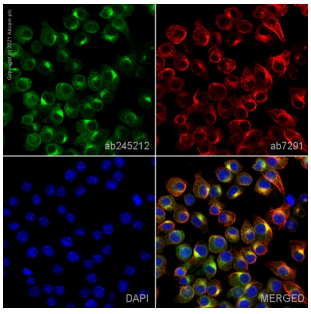


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-SEC23B antibody [EPR22723-24] (ab245212)

SEC23B Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-SEC23B antibody

Immunohistochemical analysis of paraffin-embedded mouse liver tissue labeling SEC23B with 245212 at 1/1/1000 followed by a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101). Positive staining on mouse liver is observed (PMID: 22745161).
The section was incubated with ab245212 for 30 mins at room temperature.
The immunostaining was performed on a Leica Biosystems BOND® RX instrument Counterstained with hematoxylin.
Secondary antibody only control: Secondary antibody is a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).

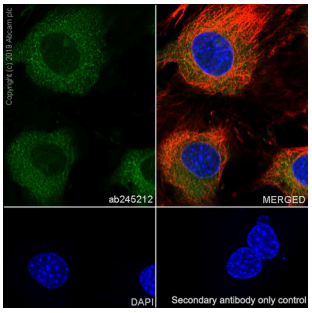
Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins.



Immunocytochemistry/ Immunofluorescence - Anti-SEC23B antibody [EPR22723-24] (ab245212)

SEC23B Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-SEC23B antibody

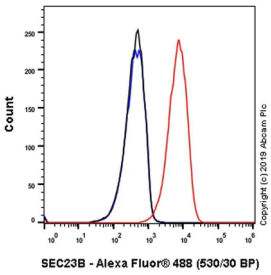
ab245212 staining SEC23B in Raw264.7 cells, with negative expression in cells. The cells were fixed with 4% formaldehyde (10 min), permeabilised with 0.1% Triton x-100 for 5 minutes and then blocked with 1% BSA/10% normal goat serum/0.3M glycine in 0.1% PBS-Tween for 1h. The cells were then incubated overnight at +4°C with ab245212 at 1 µg/ml and ab7291, Mouse monoclonal [DM1A] to alpha Tubulin at 0.5 µg/ml. Cells were then incubated with ab150081, Goat polyclonal Secondary Antibody to Rabbit IgG - H&L (Alexa Fluor® 488), pre-adsorbed at 1/1000 dilution (shown in green) and ab150119, Goat polyclonal Secondary Antibody to Mouse IgG - H&L (Alexa Fluor® 647), pre-adsorbed at 1/1000 dilution (shown in red). Nuclear DNA was labelled with DAPI (shown in blue).
Image was acquired with a confocal microscope (Leica-Microsystems TCS SP8) and a single confocal section is shown.



Immunocytochemistry/ Immunofluorescence - Anti-SEC23B antibody [EPR22723-24] (ab245212)

SEC23B Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-SEC23B antibody

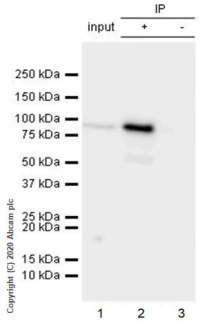
Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized MEF cells labeling SEC23B with ab245212 at 1/50 dilution, followed by ab150077 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) antibody at 1/1000 dilution (Green). Confocol image showing mainly cytoplasmic staining in MEFs. ab195889 Anti-alpha Tubulin antibody (Alexa Fluor® 594) was used to counterstain tubulin at 1/200 dilution (Red). The nuclear counterstain was DAPI (Blue). Secondary antibody only control: Secondary antibody is ab150077 Goat Anti-Rabbit IgG H&L (Alexa Fluor®488) at 1/1000 dilution.



Flow Cytometry (Intracellular) - Anti-SEC23B antibody [EPR22723-24] (ab245212)

SEC23B Flow Cytometry (Intracellular) staining using rabbit Anti-SEC23B antibody

Intracellular flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized MEF (Mouse embryonic fibroblast (immortalized)) cells labeling SEC23B with ab245212 at 1/500 dilution (0.1µg)/ (Red) compared with a Rabbit monoclonal IgG (ab172730) / (Black) isotype control and an unlabeled control (cells without incubation with primary antibody and secondary antibody) (Blue). A Goat anti rabbit IgG (Alexa Fluor®488, ab150077) at 1/2000 dilution was used as the secondary antibody.



Immunoprecipitation - Anti-SEC23B antibody [EPR22723-24] (ab245212)

SEC23B was immunoprecipitated from 0.35 mg MEF (mouse embryonic fibroblast (immortalized)) whole cell lysate 20 ug with ab245212 at 1/30. Western blot was performed on the immunoprecipitate using ab245212 at 1/500 dilution. VeriBlot for IP Detection Reagent (HRP) (ab131366) was used at 1/1000 dilution.
Lane 1: MEF whole cell lysate 20 ug.

Lane 2: ab245212 IP in MEF whole cell lysate.

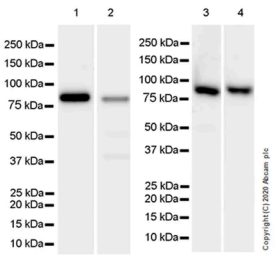
Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab245212 in MEF whole cell lysate.

Blocking and dilution buffer and concentration: 5% NFDM/TBST.

Exposure time: 1 second.

All lanes:
Immunoprecipitation - Anti-SEC23B antibody [EPR22723-24] (ab245212)

Predicted band size: 86 kDa



Western blot - Anti-SEC23B antibody [EPR22723-24] (ab245212)

Blocking and diluting buffer and concentration: 5% NFDM/TBST.
The molecular weight observed is consistent with what has been described in the literature (PMID: 22745161).

Exposure times: Lane 1: 26 seconds; Lane 2: 3 seconds; Lanes 3-4: 6 seconds.

All lanes:
Western blot - Anti-SEC23B antibody [EPR22723-24] (ab245212) at 1/1000 dilution

Lane 1:
MEF (mouse embryonic fibroblast (immortalized)) whole cell lysate at 20 µg

Lane 2:
Mouse liver tissue lysate at 20 µg

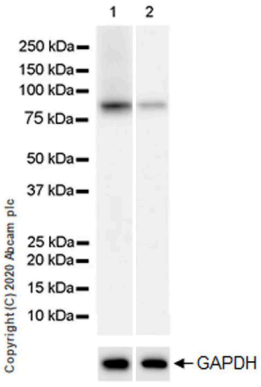
Lane 3:
RAW 264.7 (mouse abelson murine leukemia virus-induced tumor macrophage) whole cell lysate at 20 µg

Lane 4:
NIH/3T3 (mouse embryonic fibroblast) whole cell lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Predicted band size: 86 kDa



Western blot - Anti-SEC23B antibody [EPR22723-24] (ab245212)

Blocking and diluting buffer and concentration: 5% NFDM/TBST.
The lysates were kindly provided by an anonymous collaborator. Exposure time: 59 seconds.

All lanes:
Western blot - Anti-SEC23B antibody [EPR22723-24] (ab245212) at 1/1000 dilution

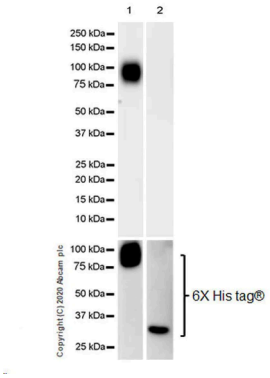
Lane 1:
MEF (mouse embryonic fibroblast (immortalized)) transfected with scrambled siRNA control whole cell lysate at 20 µg

Lane 2:
MEF (mouse embryonic fibroblast (immortalized)) transfected with siRNA specifically targeting SEC23B whole cell lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Predicted band size: 86 kDa



Western blot - Anti-SEC23B antibody [EPR22723-24] (ab245212)

Blocking and diluting buffer and concentration: 5% NFDM/TBST.
Exposure time: 26 seconds.

All lanes:
Western blot - Anti-SEC23B antibody [EPR22723-24] (ab245212) at 1/5000 dilution

Lane 1:
Purified LIF/His-tagged SEC23B recombinant protein, 10 ng

Lane 2:
His-tagged SEC23A recombinant protein, 10 ng

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Predicted band size: 86 kDa

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