abcam

ab255602

Anti-Semaphorin 7a antibody [EPR22644-79]

Recombinant | RabMAb

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	EPR22644-79
Purification technique	Affinity purification Protein A
Concentration	0.652 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Tested

Species	Human
Dilution info	1/30
Notes	-

Not recommended

Species	Rat, Mouse
Dilution info	-
Notes	-

Flow Cyt

Tested

Species	Human
Dilution info	1/600
Notes	-

Not recommended

Species	Rat, Mouse
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	1/1000
Notes	-

Not recommended

Species	Rat, Mouse
Dilution info	-
Notes	-

ICC/IF

Not recommended

Species	Human, Rat, Mouse
Dilution info	-
Notes	-

IHC-P

Tested

Species	Human
Dilution info	1/100
Notes	-

Not recommended

Species	Rat, Mouse
Dilution info	-
Notes	-

IHC-Fr

Tested

Species	Human
Dilution info	1 µg/mL
Notes	-

Not recommended

Species	Rat, Mouse
Dilution info	-
Notes	-

Target data

See full target information SEMA7A

Function	Plays an important role in integrin-mediated signaling and functions both in regulating cell migration and immune responses. Promotes formation of focal adhesion complexes, activation of the protein kinase PTK2/FAK1 and subsequent phosphorylation of MAPK1 and MAPK3. Promotes production of pro-inflammatory cytokines by monocytes and macrophages. Plays an important role in modulating inflammation and T-cell-mediated immune responses. Promotes axon growth in the embryonic olfactory bulb. Promotes attachment, spreading and dendrite outgrowth in melanocytes.

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	Semaphorin 7a also known as SEMA7A or CD108 is a glycoprotein that has a molecular mass of approximately 80 kDa. This target plays a role in axonal

	guidance and immune response regulation. It is a member of the semaphorin family which generally acts as signaling molecules. Semaphorin 7a is expressed in various tissues including the immune system nervous system and some epithelial cells. Its expression is especially significant in T-cells and is involved in modulating cell adhesion and migration.
Biological function summary	Semaphorin 7a is implicated in diverse processes such as immune system modulation and nervous system development. It functions as part of a complex involving integrins which mediate cell-to-cell communication and interaction with the extracellular matrix. This protein can bridge the immune and neural signaling pathways indicating its multifunctional nature within organisms. Its interaction with β1 integrins enhances T-cell activation and cytokine production which is important for immune response.
Pathways	Semaphorin 7a integrates into the MAPK and PI3K signaling pathways. These pathways are essential for cell survival migration and apoptosis. In the MAPK pathway Semaphorin 7a impacts downstream signaling through its interaction with ERK proteins. Its role in the PI3K pathway connects it to AKT proteins influencing cell growth and metabolic processes. These connections show its versatility and critical role in signal transduction linked to cellular behaviors.
Associated diseases and disorders	Semaphorin 7a has been associated with multiple sclerosis and melanoma. In multiple sclerosis altered expression of this protein can affect immune response and neural repair processes. Its connection to melanoma is linked with its role in regulating cell motility and adhesion impacting cancer progression and metastasis. Semaphorin 7a's interactions with proteins like Melanocortin 1 Receptor (MC1R) in melanoma provide insights into therapeutic targets for disease interventions.

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

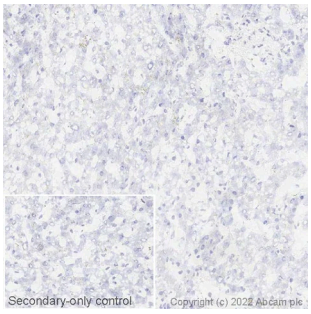
We do not recommend this combination. It is not covered by our product promise.

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.

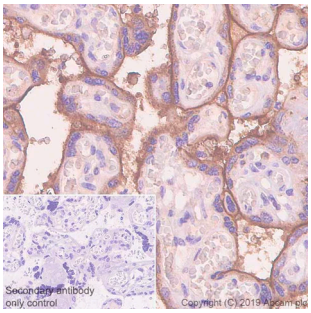
Full details and terms and conditions can be found here:
Terms & Conditions.

9 product images



Immunohistochemistry (Frozen sections) - Anti-Semaphorin 7a antibody [EPR22644-79] (ab255602)

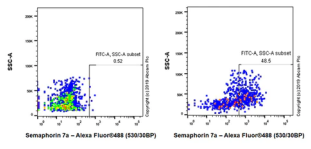
Negative control image: IHC image of Semaphorin 7a staining in a section of human normal frozen liver* performed on a Leica Biosystems BOND® RX instrument using the standard protocol. The section was fixed in 10% paraformaldehyde (10 min) prior to staining. The section was incubated with ab225602, 1ugml, 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. The inset secondary-only control image is taken from an identical assay without primary antibody. *Tissue obtained from the Human Research Tissue Bank, supported by the NIHR Cambridge Biomedical Research Centre 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.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Semaphorin 7a antibody [EPR22644-79] (ab255602)

Semaphorin 7a Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Semaphorin 7a antibody

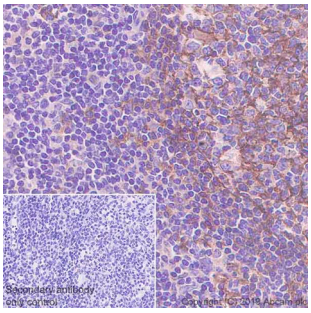
Immunohistochemical analysis of paraffin-embedded human placenta tissue labeling Semaphorin 7a with ab255602 at 1/100 dilution (6.46µg/ml) followed by a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101). Positive staining on human placenta. The section was incubated with ab255602 for 15 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with hematoxylin. Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution 2) for 20 mins. Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).



Flow Cytometry - Anti-Semaphorin 7a antibody [EPR22644-79] (ab255602)

Semaphorin 7a Flow Cytometry staining using rabbit Anti-Semaphorin 7a antibody

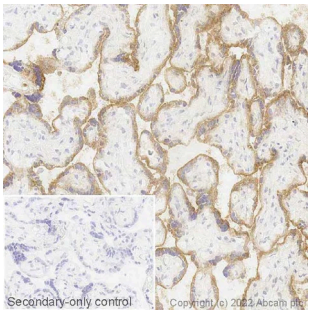
Flow cytometric analysis of human peripheral blood mononuclear cells (PBMC) treated with 10µg/ml Phytohemagglutinin (PHA) for 2 days (Right pane;) / Untreated control (Left panel) labeling Semaphorin 7a with ab255602 at a 1/600 dilution. Goat anti rabbit IgG (Alexa Fluor® 488, ab150097) secondary antibody was used at a 1/5000 dilution. Gated on viable cells.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Semaphorin 7a antibody [EPR22644-79] (ab255602)

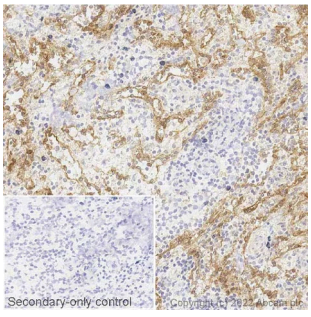
Semaphorin 7a Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Semaphorin 7a antibody

Immunohistochemical analysis of paraffin-embedded human tonsil tissue labeling Semaphorin 7a with ab255602 at 1/100 dilution (6.46 µg/ml) followed by a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101). Positive staining on human tonsil. The section was incubated with ab255602 for 15 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with hematoxylin. Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution 2) for 20 mins. Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).



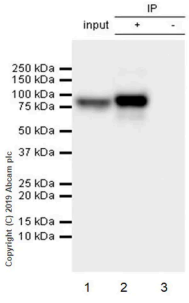
Immunohistochemistry (Frozen sections) - Anti-Semaphorin 7a antibody [EPR22644-79] (ab255602)

IHC image of Semaphorin 7a staining in a section of human normal frozen placenta* performed on a Leica Biosystems BOND® RX instrument using the standard protocol. The section was fixed in 10% paraformaldehyde (10 min) prior to staining. The section was incubated with ab255602, 1ugml, 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. The inset secondary-only control image is taken from an identical assay without primary antibody. *Tissue obtained from the Human Research Tissue Bank, supported by the NIHR Cambridge Biomedical Research Centre 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.



Immunohistochemistry (Frozen sections) - Anti-Semaphorin 7a antibody [EPR22644-79] (ab255602)

IHC image of Semaphorin 7a staining in a section of human normal frozen spleen* performed on a Leica Biosystems BOND® RX instrument using the standard protocol. The section was fixed in 10% paraformaldehyde (10 min) prior to staining. The section was incubated with ab255602, 1ugml, 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. The inset secondary-only control image is taken from an identical assay without primary antibody. *Tissue obtained from the Human Research Tissue Bank, supported by the NIHR Cambridge Biomedical Research Centre 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.



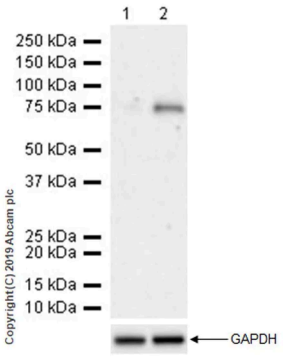
Immunoprecipitation - Anti-Semaphorin 7a antibody [EPR22644-79] (ab255602)

Semaphorin 7a was immunoprecipitated from 0.35 mg human testis lysate 10µg with ab255602 at 1/30 dilution (2µg in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab255602. VeriBlot for IP Detection Reagent (HRP) (ab131366) was used at a 1/1000 dilution.
Lane 1: Human testis lysate 10µg
Lane 2: ab255602 IP in Human testis lysate
Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab255602 in human testis lysate.

Blocking/Dilution buffer: 5% NFDM/TBST.
Exposure time: 3 seconds
All lanes:
Immunoprecipitation - Anti-Semaphorin 7a antibody [EPR22644-79] (ab255602)

Predicted band size: 50 kDa, 75 kDa

Observed band size: 75 kDa



Western blot - Anti-Semaphorin 7a antibody [EPR22644-79] (ab255602)

Blocking/Dilution buffer: 5% NFDM/TBST.
The expression profile/ molecular weight observed is consistent with what has been described in the literature (PMID: 26752048, 20962327).

All lanes:
Western blot - Anti-Semaphorin 7a antibody [EPR22644-79] (ab255602) at 1/1000 dilution

Lane 1:
Untreated A549 (human lung carcinoma epithelial cell) whole cell lysate at 10 µg

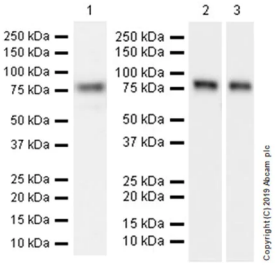
Lane 2:
A549 treated with 100ng/ml TNF-alpha for 8 hours whole cell lysate at 10 µg

Secondary

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

Predicted band size: 75 kDa

Exposure time: 3min



Western blot - Anti-Semaphorin 7a antibody [EPR22644-79] (ab255602)

The expression profile/ molecular weight observed is consistent with what has been described in the literature (PMID: 26752048, 20962327).
Blocking/Dilution buffer: 5% NFDM/TBST.

Exposure times: Lane 1: 10 secs; Lanes 2-3: 37 secs.

All lanes:
Western blot - Anti-Semaphorin 7a antibody [EPR22644-79] (ab255602) at 1/1000 dilution

Lane 1:
Human tonsil lysate at 20 µg

Lane 2:
Human testis lysate at 20 µg

Lane 3:
Human placenta lysate at 20 µg

Secondary

All lanes:

Western blot - VeriBlot for IP Detection Reagent (HRP) (ab131366) at 1/1000 dilution

Predicted band size: 75 kDa

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