abcam

ab312851

Anti-Prosurfactant Protein C antibody [EPR28174-18] - BSA and Azide free

Recombinant | RabMAb | Advanced Validation

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	EPR28174-18
Purification technique	Affinity purification Protein A
Specificity	This antibody has been tested with overexpressing Prosurfactant Protein C samples in Western blot, ICC/IF and Flow cytometry.
Concentration	1.034 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Tested

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

Expected

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

Not recommended

Species	Rat, Transfected cell line - Human, Transfected cell line - Mouse
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Transfected cell line - Human, Transfected cell line - Mouse
Dilution info	-
Notes	-

Expected

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

Not recommended

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

Flow Cyt (Intra)

Tested

Species	Transfected cell line - Human, Transfected cell line - Mouse
Dilution info	-
Notes	-

Expected

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

Not recommended

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

mIHC

Tested

Species	Human
Dilution info	-
Notes	-

Expected

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

Not recommended

Species	Transfected cell lysate - Human, Transfected cell lysate - Mouse, Transfected cell line - Human, Transfected cell line - Mouse
Dilution info	-
Notes	-

IHC-P

Tested

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

Not recommended

Species	Transfected cell lysate - Human, Transfected cell lysate - Mouse, Transfected cell line - Human, Transfected cell line - Mouse
Dilution info	-
Notes	-

IP

Tested

Species	Human
Dilution info	-
Notes	-

Expected

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

Not recommended

Species	Transfected cell lysate - Human, Transfected cell lysate - Mouse, Transfected cell line - Human, Transfected cell line - Mouse
Dilution info	-
Notes	-

Target data

See full target information SFTPC

Function	Pulmonary surfactant associated proteins promote alveolar stability by lowering the surface tension at the air-liquid interface in the peripheral air spaces.

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C

Notes

ab312851 is the carrier-free version of ab312850.

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	Prosurfactant Protein C (Pro-SP-C) often referred to as SPC or by its abbreviated form SP-C is a hydrophobic peptide critical for lung function. This protein has a mass of approximately 21 kDa and is expressed prominently in the alveolar type II cells of the lung tissue. Beyond its full-length variant various pro forms such as proSP-C are studied for their roles during protein maturation and trafficking. These pro forms are essential for producing the mature functional SP-C a critical component of lung surfactant which reduces surface tension in alveoli and prevents lung collapse.
Biological function summary	In surfactant homeostasis Prosurfactant Protein C associates with surfactant protein complexes where it interacts with phospholipids like phosphatidylcholine to stabilize the alveolar structures. As part of this complex it aids in reducing surface tension at the air-liquid interface in the alveoli and contributes to the host defense system by fostering pathogen clearance and modulating inflammation. The intricate processing of Pro-SP-C into its mature form involves fucosylation and other post-translational modifications which are key for functional surfactant activity.
Pathways	The role of Prosurfactant Protein C is integral to the surfactant metabolism pathway affecting lung function and homeostasis. This pathway is important for proper respiratory mechanics and is closely linked to other surfactant proteins like SP-B and SP-D. These proteins work together within the lipid-protein matrix of the surfactant to ensure proper alveolar deflation and reinflation during respiration. Disruption within these pathways can have significant impact on lung health and respiratory physiology.
Associated diseases and disorders	Mutations or dysfunctions in Prosurfactant Protein C are linked to interstitial lung diseases including pulmonary alveolar proteinosis and idiopathic pulmonary fibrosis. These conditions often result from misfolded proteins or improper surfactant metabolism leading to compromised lung function. Connections with disorders like these highlight interactions between Prosurfactant Protein C and C-reactive protein uncovering underlying inflammatory processes. Therapy and research often target these protein interactions and modifications as understanding them holds potential for strategic intervention in surfactant-related pathologies.

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

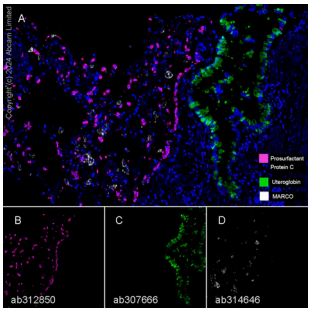
We do not recommend this combination. It is not covered by our product promise.

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.

14 product images



Multiplex immunohistochemistry - Anti-Prosurfactant Protein C antibody [EPR28174-18] - BSA and Azide free (ab312851)

This data was developed using ab312850, the same antibody clone in a different buffer formulation.

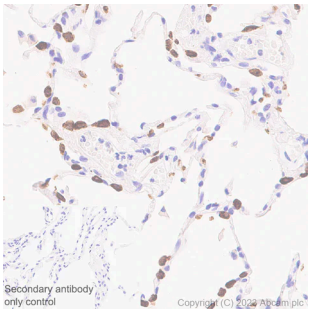
Multiplex immunohistochemistry analysis of formalin/PFA-fixed paraffin-embedded Human lung tissue staining Prosurfactant Protein C with ab312850 at a 1:2000 (0.26 ug/ml) dilution; Uteroglobin with ab307666 at 1:2000 dilution and MARCO with ab314646 at 1:100 (5.1 ug/ml) dilution followed by a ready to use secondary antibody Opal Polymer HRP Ms + Rb.

Panel A: merged staining of anti-Prosurfactant Protein C (magenta; Opal™690), anti-Uteroglobin (green; Opal™520) and anti-MARCO (gray; Opal™570) on human lung.
Panel B: anti-Prosurfactant Protein C staining pneumocytes in human lung.
Panel C: anti-Uteroglobin staining club cells in human lung.
Panel D: anti-MARCO staining alveolar macrophages in human lung.
Nuclear DNA was labeled with DAPI (shown in blue).

The section was incubated in three rounds of staining: in the order of ab312850, ab307666 and ab314646 for 30 mins at room temperature. Each round was followed by a separate fluorescent tyramide signal amplification system.

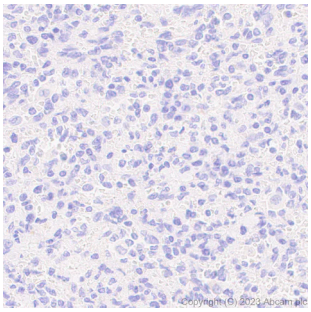
The immunostaining was performed on a Leica Biosystems BOND® RX instrument with an Opal™ 4-color kit. Image acquisition was performed with Leica SP8 confocal microscope.

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



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Prosurfactant Protein C antibody [EPR28174-18] - BSA and Azide free (ab312851)

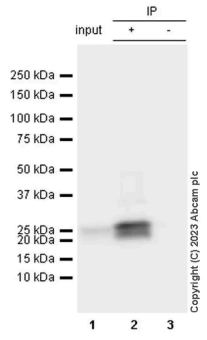
This data was developed using ab312850, the same antibody clone in a different buffer formulation. Immunohistochemical analysis of paraffin-embedded Human lung tissue labeling Prosurfactant Protein C with ab312850 at 1/2000 (0.26 µg/ml) followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Positive staining on human lung. The section was incubated with ab312850 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 LeicaDS9800 (Bond™ Polymer Refine Detection).Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Prosurfactant Protein C antibody [EPR28174-18] - BSA and Azide free (ab312851)

Prosurfactant Protein C Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Human spleen using rabbit Anti-Prosurfactant Protein C antibody

This data was developed using ab312850, the same antibody clone in a different buffer formulation. Immunohistochemical analysis of paraffin-embedded Human spleen tissue labeling Prosurfactant Protein C with ab312850 at 1/2000 (0.26 µg/ml) followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Negative control: no staining on human spleen. The section was incubated with ab312850 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 LeicaDS9800 (Bond™ Polymer Refine Detection).Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins



Immunoprecipitation - Anti-Prosurfactant Protein C antibody [EPR28174-18] - BSA and Azide free (ab312851)

This data was developed using ab312850, the same antibody clone in a different buffer formulation.
Prosurfactant Protein C was immunoprecipitated from 0.35 mg Human lung tissue lysate with ab312850 at 1/30 dilution (2µg in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab312850 at 1/1000 dilution. VeriBlot for IP secondary antibody (HRP) (ab131366) was used at 1/5000 dilution.

Lane 1: Human lung tissue lysate
Lane 2: ab312850 IP in Human lung tissue lysate
Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab312850 in human lung tissue lysate.

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

Exposure time: 1 second

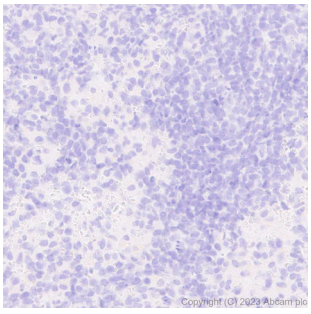
All lanes:
Immunoprecipitation - Anti-Prosurfactant Protein C antibody [EPR28174-18] (ab312850) at 1/1000 dilution

All lanes:
Human lung tissue lysate

Secondary

All lanes:
Immunoprecipitation - VeriBlot for IP Detection Reagent (HRP) (ab131366) at 1/5000 dilution

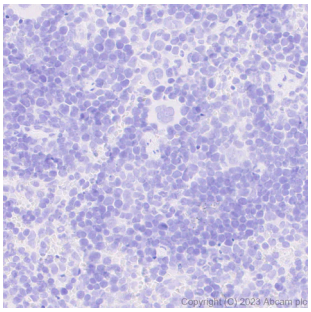
Exposure time: 1s



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Prosurfactant Protein C antibody [EPR28174-18] - BSA and Azide free (ab312851)

Prosurfactant Protein C Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Rat spleen using rabbit Anti-Prosurfactant Protein C antibody

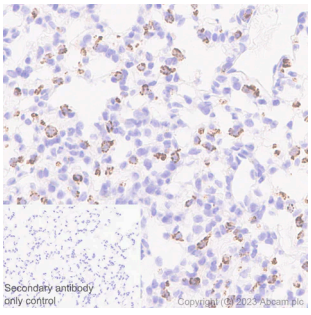
This data was developed using ab312850, the same antibody clone in a different buffer formulation. Immunohistochemical analysis of paraffin-embedded Rat spleen tissue labeling Prosurfactant Protein C with ab312850 at 1/2000 (0.26 µg/ml) followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Negative control: no staining on rat spleen. The section was incubated with ab312850 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 LeicaDS9800 (Bond™ Polymer Refine Detection).Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Prosurfactant Protein C antibody [EPR28174-18] - BSA and Azide free (ab312851)

Prosurfactant Protein C Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Mouse spleen using rabbit Anti-Prosurfactant Protein C antibody

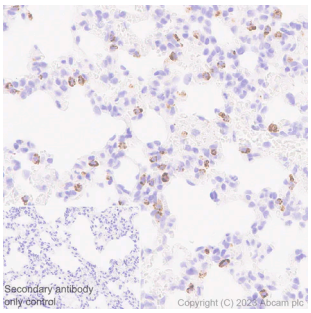
This data was developed using ab312850, the same antibody clone in a different buffer formulation. Immunohistochemical analysis of paraffin-embedded Mouse spleen tissue labeling Prosurfactant Protein C with ab312850 at 1/2000 (0.26 µg/ml) followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Negative control: no staining on mouse spleen. The section was incubated with ab312850 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 LeicaDS9800 (Bond™ Polymer Refine Detection).Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Prosurfactant Protein C antibody [EPR28174-18] - BSA and Azide free (ab312851)

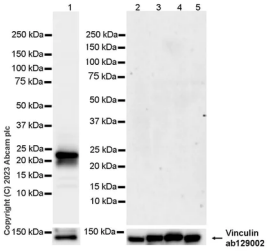
This data was developed using ab312850, the same antibody clone in a different buffer formulation. Immunohistochemical analysis of paraffin-embedded Mouse lung tissue labeling Prosurfactant Protein C with ab312850 at 1/2000 (0.26 µg/ml) followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Positive staining on mouse lung (PMID: 23967208). The section was incubated with ab312850 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 LeicaDS9800

(Bond™ Polymer Refine Detection).Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Prosurfactant Protein C antibody [EPR28174-18] - BSA and Azide free (ab312851)

This data was developed using ab312850, the same antibody clone in a different buffer formulation. Immunohistochemical analysis of paraffin-embedded Rat lung tissue labeling Prosurfactant Protein C with ab312850 at 1/2000 (0.26 µg/ml) followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Positive staining on rat lung. The section was incubated with ab312850 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 LeicaDS9800 (Bond™ Polymer Refine Detection).Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins



Western blot - Anti-Prosurfactant Protein C antibody [EPR28174-18] - BSA and Azide free (ab312851)

Prosurfactant Protein C Western blot staining using rabbit Anti-Prosurfactant Protein C antibody

This data was developed using ab312850, the same antibody clone in a different buffer formulation. Blocking and diluting buffer and concentration: 5% NFDM/TBST Negative control: cerebellum, liver, kidney, spleen. The expression profile/ molecular weight observed is consistent with what has been described in the reference (PMID: 27770432, PMID: 34469722). In Western blot, Anti-Vinculin antibody [EPR8185] (ab129002) staining at 1/10000 dilution. Exposure time: Lane 1: 3 seconds, lanes 2-5: 180 seconds
All lanes:
Western blot - Anti-Prosurfactant Protein C antibody [EPR28174-18] (ab312850) at 1/1000 dilution

Lane 1:
Human lung tissue lysate at 20 µg

Lane 2:
Human cerebellum tissue lysate at 20 µg

Lane 3:
Human liver tissue lysate at 20 µg

Lane 4:
Human kidney tissue lysate at 20 µg

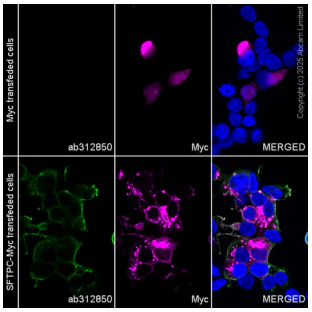
Lane 5:
Human spleen tissue lysate at 20 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG (HRP) with minimal cross-reactivity with human IgG at 1/2000 dilution

Observed band size: 21 kDa

Exposure time: 180s



Immunocytochemistry/ Immunofluorescence - Anti-Prosurfactant Protein C antibody [EPR28174-18] - BSA and Azide free (ab312851)

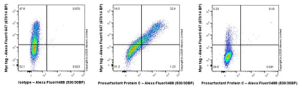
Prosurfactant Protein C Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Prosurfactant Protein C antibody

This data was developed using ab312850, the same antibody clone in a different buffer formulation.

Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized 293T (human embryonic kidney epithelial cell) transfected with an empty vector containing a Myc tag; 293T transfected with a human SFTPC containing a Myc tag cells labeling Prosurfactant Protein C with ab312850 at 1/500 dilution following ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 dilution (Green).

Confocal image showing membrane and cytoplasmic staining in 293T cells transfected with a human SFTPC containing a Myc tag (shown in green). The counterstain was observed in magenta. Nuclear DNA was labelled with DAPI (shown in blue). Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).

ab223894 Anti-Myc tag mouse monoclonal antibody (Alexa Fluor® 594) was used to counterstain at 1/100 dilution (Magenta).



Flow Cytometry (Intracellular) - Anti-Prosurfactant Protein C antibody [EPR28174-18] - BSA and Azide free (ab312851)

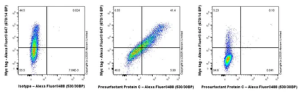
Prosurfactant Protein C Flow Cytometry (Intracellular) staining using rabbit Anti-Prosurfactant Protein C antibody

This data was developed using ab312850, the same antibody clone in a different buffer formulation.

Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized 293T cells transfected with a mouse SFTPC expression vector containing a myc-His-tag® (Middle); 293T cells transfected with an empty expression vector containing a myc-His-tag® (Right) cells labelling Prosurfactant Protein C with ab312850 at 1/50000 dilution (0.001 ug) / Middle and right compared with a Rabbit monoclonal IgG (ab172730) / Left isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody).

Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) at 1/5000 dilution was used as the secondary antibody.

Cells were co-stained with anti-myc conjugated to Alexa Fluor®647.



Flow Cytometry (Intracellular) - Anti-Prosurfactant Protein C antibody [EPR28174-18] - BSA and Azide free (ab312851)

Prosurfactant Protein C Flow Cytometry (Intracellular) staining using rabbit Anti-Prosurfactant Protein C antibody

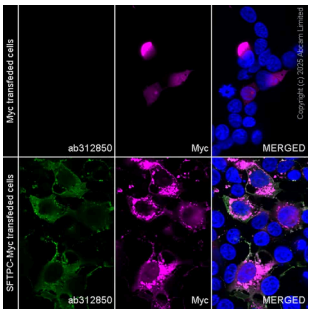
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Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized 293T cells transfected with a human SFTPC expression vector containing a myc-His-tag® (Middle); 293T cells transfected with an empty expression vector containing a myc-His-tag® (Right) cells labelling

Prosurfactant Protein C with ab312850 at 1/50000 dilution (0.001 ug) / Middle and right compared with a Rabbit monoclonal IgG (ab172730) / Left isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody).

Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) at 1/5000 dilution was used as the secondary antibody.

Cells were co-stained with anti-myc conjugated to Alexa Fluor®647.



Immunocytochemistry/ Immunofluorescence - Anti-Prosurfactant Protein C antibody [EPR28174-18] - BSA and Azide free (ab312851)

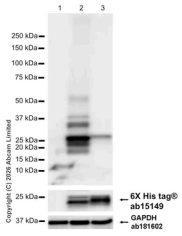
Prosurfactant Protein C Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Prosurfactant Protein C antibody

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Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized 293T (human embryonic kidney epithelial cell) transfected with an empty vector containing a Myc tag; 293T transfected with a mouse SFTPC containing a Myc tag cells labeling Prosurfactant Protein C with ab312850 at 1/500 dilution following ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 dilution (Green).

Confocal image showing membrane and cytoplasmic staining in 293T cells transfected with a mouse SFTPC containing a Myc tag (shown in green). The counterstain was observed in magenta. Nuclear DNA was labelled with DAPI (shown in blue). Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).

ab223894 Anti-Myc tag mouse monoclonal antibody (Alexa Fluor® 594) was used to counterstain at 1/100 dilution (Magenta).



Western blot - Anti-Prosurfactant Protein C antibody [EPR28174-18] - BSA and Azide free (ab312851)

Prosurfactant Protein C Western blot staining using rabbit Anti-Prosurfactant Protein C antibody

This data was developed using ab312850, the same antibody clone in a different buffer formulation.

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

In Western blot, Anti-GAPDH antibody [EPR16891] - Loading Control (ab181602) was used at 1/200000 dilution (36KDa).

All lanes:
Western blot - Anti-Prosurfactant Protein C antibody [EPR28174-18] (ab312850) at 1/1000 dilution

Lane 1:
293T (human embryonic kidney epithelial cell) transfected with an empty vector containing a His-tag, whole cell lysate at 20 µg

Lane 2:
293T transfected with a human SFTPC expression vector containing a His-tag, whole cell lysate at 20 µg

Lane 3:

293T transfected with a mouse SFTPC expression vector containing a His-tag, whole cell lysate at 20 µg

Secondary

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

Observed band size: 21 kDa

Exposure time: 4s

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