abcam

ab90716

Anti-Prosurfactant Protein C antibody

Anti-Prosurfactant Protein C antibody (ab90716) is a rabbit polyclonal antibody detecting Prosurfactant Protein C in **Western Blot, IP, IHC-P, ICC/IF**. Suitable for **Human, Mouse**.

- Over 90 publications
- Trusted since 2010

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.4 Preservative: 0.02% Sodium azide Constituents: PBS, 1% BSA
Form	Liquid
Clonality	Polyclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Purification technique	Affinity purification Immunogen
Specificity	From Mar 2024, QC testing of replenishment batches of this polyclonal changed. All tested and expected application and reactive species combinations are still covered by our Abcam product promise. However, we no longer test all applications. For more information on a specific batch, please contact our Scientific Support who will be happy to help. You may also be interested in our alternative recombinant antibody, ab211326.
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	1 µg/mL
Notes	-

Expected

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

Predicted

Species	Rhesus monkey
Dilution info	-
Notes	-

IP

Tested

Species	Mouse
Dilution info	5 µg/mL
Notes	-

Expected

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

Predicted

Species	Rhesus monkey
Dilution info	-

Notes	-

ICC/IF

Expected

Species	Human
Dilution info	1 µg/mL
Notes	-

Species	Mouse
Dilution info	1 µg/mL
Notes	-

Predicted

Species	Rhesus monkey
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/10000
Notes	-

Species	Mouse
Dilution info	1/10000
Notes	-

Predicted

Species	Rhesus monkey
Dilution info	-

Notes	-

WB

Tested

Species	Human
Dilution info	1/1000
Notes	-

Species	Mouse
Dilution info	1/1000
Notes	-

Predicted

Species	Rhesus monkey
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 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

Product Specifications

Anti-Prosurfactant Protein C antibody (ab90716) is a rabbit polyclonal antibody and is validated for use in ICC/IF, IHC-P, IP, WB in human, mouse samples.

Anti-Prosurfactant Protein C antibody (ab90716) specifically detects Prosurfactant Protein C (UniProt ID: P11686; Molecular weight: 4kDa) and is sold in 100 µg selling sizes.

Quality and Validation

Abcam's high quality validation processes ensure Anti-Prosurfactant Protein C antibody (ab90716) has high sensitivity and specificity.

Anti-Prosurfactant Protein C antibody (ab90716) has been cited over 93 times in peer reviewed journals and is trusted by the scientific community.

Anti-Prosurfactant Protein C antibody (ab90716) has 11 independent reviews from customers.

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

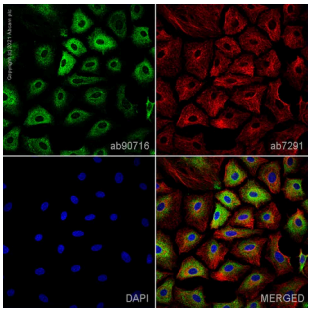
We do not recommend this combination. It is not covered by our product promise.

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.

11 product images

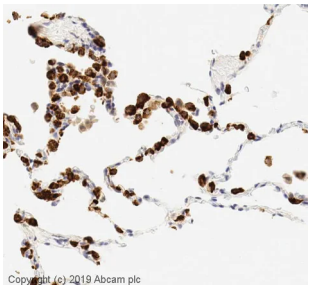


Immunocytochemistry/ Immunofluorescence - Anti-Prosurfactant Protein C antibody (ab90716)

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

ab90716 staining Prosurfactant Protein C in A549 cells. The cells were fixed with 100% methanol (5 min), permeabilized with 0.1% PBS-Tween 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 ab90716 at 1µg/ml and ab7291, Mouse monoclonal [DM1A] to alpha Tubulin - Loading Control. 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 ab150120, Goat polyclonal Secondary Antibody to Mouse IgG - H&L (Alexa Fluor® 594), pre-adsorbed at 1/1000 dilution (shown in pseudocolour red). Nuclear DNA was labelled with DAPI (shown in blue).
Also suitable in cells fixed with 4% paraformaldehyde (10 min).

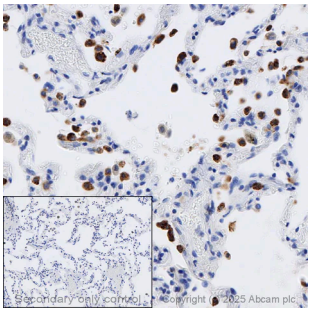
Image was acquired with a high-content analyser (Operetta CLS, Perkin Elmer) and a maximum intensity projection of confocal sections is shown.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Prosurfactant Protein C antibody (ab90716)

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

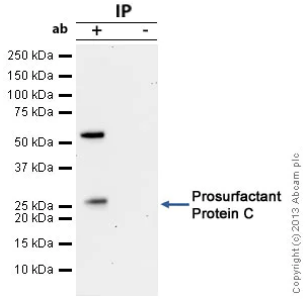
IHC image of Prosurfactant Protein C staining in a section of formalin-fixed paraffin-embedded normal human lung performed on a Leica BOND™ system using the standard protocol **F**. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH6, epitope retrieval solution 1) for 20mins. The section was then incubated with ab90716, 1ug/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.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Prosurfactant Protein C antibody (ab90716)

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

Immunohistochemical analysis of formalin fixed paraffin embedded human lung labelling prosurfactant rotein C with ab90716 at a concentration of 0.1µg/ml. The immunostaining was performed on a Ventana DISCOVERY ULTRA (Roche Tissue Diagnostics) instrument with a OptiView DAB IHC Detection Kit. Heat mediated antigen retrieval was performed with DISCOVERY cell conditioning solution (CC1) 100°C, pH8.5 for 32mins. ab90716 Anti-Prosurfactant Protein C antibody was incubated for 16mins at 37°C. Sections were counterstained with Hematoxylin II. Image inset shows absence of staining in secondary antibody only control.
Customers are encouraged to optimise antigen retrieval conditions, antibody concentration, incubation times and temperature for best results in their own IHC assay workflow (automated and manual).



Immunoprecipitation - Anti-Prosurfactant Protein C antibody (ab90716)

Prosurfactant Protein C was immunoprecipitated using 0.5mg Mouse Lung tissue, 5µg of Rabbit polyclonal to Prosurfactant Protein C and 50µl of protein G magnetic beads (+). No antibody was added to the control (-).
The antibody was incubated under agitation with Protein G beads for 10min, Mouse Lung tissue lysate diluted in RIPA buffer was added to each sample and incubated for a further 10min under agitation.

Proteins were eluted by addition of 40µl SDS loading buffer and incubated for 10min at 70°C; 10µl of each sample was separated on a SDS PAGE gel, transferred to a nitrocellulose membrane, blocked with 5% BSA and probed with ab90716.

Secondary: Mouse monoclonal [SB62a] Secondary Antibody to Rabbit IgG light chain (HRP) (ab99697).

Band: 23kDa; Prosurfactant Protein C

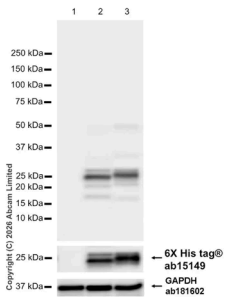
All lanes:
Immunoprecipitation - Anti-Prosurfactant Protein C antibody (ab90716)

Developed using the ECL technique.

Performed under reducing conditions.

Predicted band size: 21 kDa

Exposure time: 20min



Western blot - Anti-Prosurfactant Protein C antibody (ab90716)

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

Blocking and diluting buffer and concentration: 5% NFDM/TBST.
In Western blot, Anti-GAPDH antibody [EPR16891] - Loading Control (ab181602).

In Western blot, Anti-6X His tag® antibody [AD1.1.10] - Loading Control (ab15149).

All lanes:
Western blot - Anti-Prosurfactant Protein C antibody (ab90716) 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

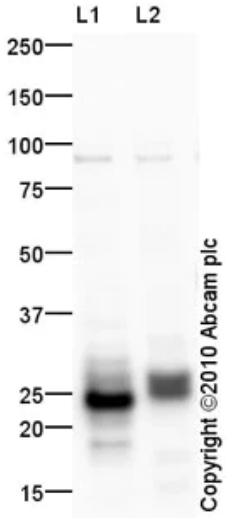
Lane 3:
293T transfected with a mouse SFTPC expression vector containing a His-tag, whole cell lysate at 20 µg

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



Western blot - Anti-Prosurfactant Protein C antibody (ab90716)

All lanes:
Western blot - Anti-Prosurfactant Protein C antibody (ab90716) at 1 µg/mL

Lane 1:
Lung (Human) Tissue Lysate at 10 µg

Lane 2:
Lung (Mouse) Tissue Lysate at 10 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) preadsorbed (ab97080) at 1/5000 dilution

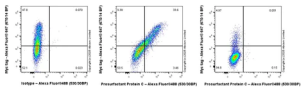
Developed using the ECL technique.

Performed under reducing conditions.

Predicted band size: 21 kDa

Observed band size: 25 kDa, 28 kDa, 90 kDa

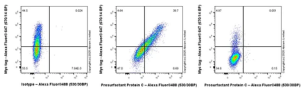
Exposure time: 3min



Flow Cytometry (Intracellular) - Anti-Prosurfactant Protein C antibody (ab90716)

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

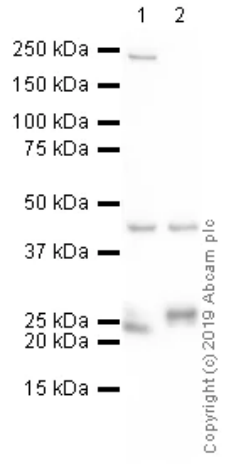
Flow cytometry (intracellular) analysis of transfected 293T cells. Cells were fixed with 4% PFA for 10 minutes and permeabilised with 90% methanol before staining for SFTPC in 293T cells transfected with a mouse SFTPC expression vector containing a myc-His-tag® using antibody ab90716 at a 1/1000 dilution (1 µg/ml) (middle panel). Staining was compared with 293T cells transfected with an empty expression vector containing a myc⊠His⊠tag® (right panel) and with an isotype control, rabbit monoclonal IgG (ab172730) (left panel). Goat anti⊠rabbit IgG (Alexa Fluor® 488, ab150081) was used as the secondary antibody at a 1/5000 dilution.



Flow Cytometry (Intracellular) - Anti-Prosurfactant Protein C antibody (ab90716)

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

Flow cytometry (intracellular) analysis of transfected 293T cells. Cells were fixed with 4% PFA for 10 minutes and permeabilised with 90% methanol before staining for SFTPC in 293T cells transfected with a human SFTPC expression vector containing a myc-His-tag® using antibody ab90716 at a 1/1000 dilution (1 µg/ml) (middle panel). Staining was compared with 293T cells transfected with an empty expression vector containing a myc⊠His⊠tag® (right panel) and with an isotype control, rabbit monoclonal IgG (ab172730) (left panel). Goat anti⊠rabbit IgG (Alexa Fluor® 488, ab150081) was used as the secondary antibody at a 1/5000 dilution.



Western blot - Anti-Prosurfactant Protein C antibody (ab90716)

All lanes:
Western blot - Anti-Prosurfactant Protein C antibody (ab90716) at 1 µg/mL

All lanes:
Lung (Human) Tissue Lysate at 10 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG H&L (HRP) preadsorbed at 1/50000 dilution

Developed using the ECL technique.

Performed under reducing conditions.

Predicted band size: 21 kDa

Observed band size: 25 kDa, 28 kDa, 45 kDa

Exposure time: 2min

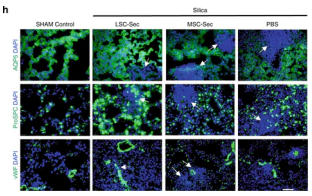


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Immunohistochemistry - Anti-Prosurfactant Protein C antibody (ab90716)

Prosurfactant Protein C Immunohistochemistry staining using rabbit Anti-Prosurfactant Protein C antibody

Immunohistochemistry-immunofluorescence using Anti-Prosurfactant Protein C antibody, ab90716. Publication image from Adler, K. B. et al., 2020, Nat Commun, 32111836. Legend direct from paper.

Lung repair and fibrosis in mice after silica-injury.a The experimental study schematic of the silica-induced fibrosis study in A/J mice; n = 10 biological independent animals per group. b Representative TUNEL staining of apoptotic cells for each treatment group and quantification of percent of Tunel positive cells; Scale bar = 50 µm; each dot represents data from one animal; n = 5 biological independent animals. c Representative H&E staining. Scale bar = 100 µm. d Quantification of fibrosis by Ashcroft score; each dot represents data from one animal; n = 8 biological independent animals. Ashcroft score was performed by averaging the score from two blinded and one non-blinded scorer. e Gomori’ s trichrome staining: muscle fibers (red), collagen (blue), nuclei (black-purple) and erythrocytes (red). Scale bar = 100 µm. f Representative picrosirius red staining; Collagen types I and III (red). Scale bar = 100 µm. g Quantification of pulmonary hydroxyproline levels; each dot represents data from one animal; n = 4 biological independent animals. h Representative immunostaining of lung sections for aquaporin 5 (AQP5), pro-surfactant protein C (Pro-SPC) and von Willebrand Factor (vWF) Scale bar = 50 µm. i–k Quantification of percent pixel intensity of AQP5+ (i), ProSPC+ (j), and vWF+ (k). Each dot represents data from one animal; n = 4 biological independent animals. Throughout, data are mean ± s.d. P-value as indicated by non-parametric one-way ANOVA; NS, not significant.

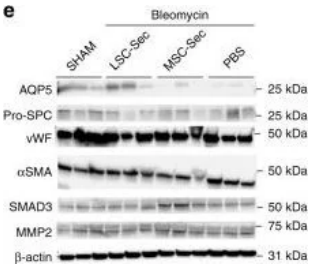


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Western blot - Anti-Prosurfactant Protein C antibody (ab90716)

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

Western Blotting using Anti-Prosurfactant Protein C antibody, ab90716. Publication image from Adler, K. B. et al., 2020, Nat Commun, 32111836. Legend direct from paper.

LSC-Sec inhalation treatment promotes alveolar repair.a Representative immunostaining of lung sections for von Willebrand Factor (vWF), pro-surfactant protein C (Pro-SPC) and aquaporin 5 (AQP5). Scale bar = 100 µm. b–d Quantification of percent pixel intensity of vWF+ (b), percent ProSPC+ nuclei (c), and percent pixel intensity of AQP5+ (d); each dot represents data from one animal; n = 12 biological independent animals. e–f Immunoblot analysis of aquaporin 5 (AQP5), pro-surfactant protein C (Pro-SPC), von Willebrand Factor (vWF), alpha smooth muscle actin (αSMA), SMAD3, matrix metalloproteinase 2 (MMP-2), and beta-actin loading control (B-actin) from lung protein lysate (e) with corresponding quantification of protein levels as fold of sham control (f); each dot represents data from one animal; n = 3 biological independent animals. g–h Representative cytokine array with quantification of relative intensity (g) and corresponding quantification of relative intensity (h). Throughout, data are mean ± s.d. P-value as indicated by non-parametric one-way ANOVA.

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