

SP-B (1B9): sc-53137

BACKGROUND

Pulmonary surfactant is primarily responsible for lowering the surface tension at the air-liquid interface in the alveoli, a process that is essential for normal respiration. Pulmonary surfactant is a mixture of phospholipids and proteins, including four distinct surfactant-associated proteins (SPs), SP-A, SP-B, SP-C, SP-D. SP-B and SP-C are predominantly hydrophobic proteins that associate with lipids to promote the absorption of surfactant phospholipids and to reduce the surface tension in the alveoli. SP-A and SP-D are large multimeric proteins belonging to the family of calcium-dependent lectins, designated collectins, which contribute to the innate immune system. Both SP-A and SP-D have been shown to protect against microbial challenge through binding to the lipid components of the bacterial cell wall and facilitating the rapid removal of microbials.

REFERENCES

1. Glasser, S.W., et al. 1990. Structure and expression of the pulmonary surfactant protein SP-C gene in the mouse. *J. Biol. Chem.* 265: 21986-21991.
2. Hawgood, S. and Shiffer, K. 1991. Structures and properties of the surfactant-associated proteins. *Annu. Rev. Physiol.* 53: 375-394.
3. Johansson, J., et al. 1992. Human surfactant poly-peptide SP-B. Disulfide bridges, C-terminal end and peptide analysis of the airway form. *FEBS Lett.* 301: 165-167.
4. Crouch, E., et al. 1993. Genomic organization of human surfactant protein-D (SP-D). SP-D is encoded on chromosome 10q22.2-23.1. *J. Biol. Chem.* 268: 2976-2983.

CHROMOSOMAL LOCATION

Genetic locus: SFTPB (human) mapping to 2p11.2; Sftpb (mouse) mapping to 6 C1.

SOURCE

SP-B (1B9) is a mouse monoclonal antibody raised against full length SP-B of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

SP-B (1B9) is available conjugated to agarose (sc-53137 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-53137 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-53137 PE), fluorescein (sc-53137 FITC), Alexa Fluor[®] 488 (sc-53137 AF488), Alexa Fluor[®] 546 (sc-53137 AF546), Alexa Fluor[®] 594 (sc-53137 AF594) or Alexa Fluor[®] 647 (sc-53137 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-53137 AF680) or Alexa Fluor[®] 790 (sc-53137 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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RESEARCH USE

For research use only, not for use in diagnostic procedures.

APPLICATIONS

SP-B (1B9) is recommended for detection of SP-B of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for SP-B siRNA (h): sc-36537, SP-B siRNA (m): sc-36538, SP-B shRNA Plasmid (h): sc-36537-SH, SP-B shRNA Plasmid (m): sc-36538-SH, SP-B shRNA (h) Lentiviral Particles: sc-36537-V and SP-B shRNA (m) Lentiviral Particles: sc-36538-V.

Molecular Weight of SP-B precursor: 43 kDa.

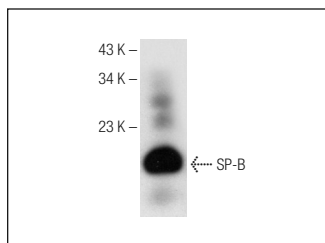
Molecular Weight of mature SP-B: 9 kDa.

Positive Controls: Raji whole cell lysate: sc-364236, human lung extract: sc-363767 or mouse lung extract: sc-2390.

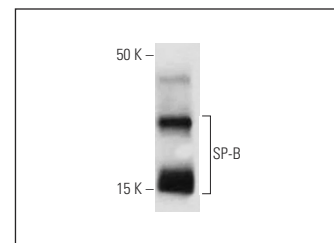
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker[™] Molecular Weight Standards: sc-2035, UltraCruz[®] Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



SP-B (1B9): sc-53137. Western blot analysis of SP-B expression in human lung tissue extract.



SP-B (1B9): sc-53137. Western blot analysis of SP-B expression (oligomers) in human lavage fluid. Data kindly provided by the Whitsett laboratory, Cincinnati Children's Hospital Medical Center.

SELECT PRODUCT CITATIONS

1. Nguyen, L.A., et al. 2005. Physical and functional link of the leukemia-associated factors AML1 and PML. *Blood* 105: 292-300.
2. Ohlmeier, S., et al. 2008. Proteomics of human lung tissue identifies surfactant protein A as a marker of chronic obstructive pulmonary disease. *J. Proteome Res.* 7: 5125-5132.

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.