

# SP-B (F-2): sc-133143

## 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.

## CHROMOSOMAL LOCATION

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

## SOURCE

SP-B (F-2) is a mouse monoclonal antibody raised against amino acids 1-300 of SP-B of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>2b</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

SP-B (F-2) is available conjugated to agarose (sc-133143 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-133143 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-133143 PE), fluorescein (sc-133143 FITC), Alexa Fluor® 488 (sc-133143 AF488), Alexa Fluor® 546 (sc-133143 AF546), Alexa Fluor® 594 (sc-133143 AF594) or Alexa Fluor® 647 (sc-133143 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-133143 AF680) or Alexa Fluor® 790 (sc-133143 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

## APPLICATIONS

SP-B (F-2) is recommended for detection of SP-B of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) 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 mature SP-B: 9 kDa.

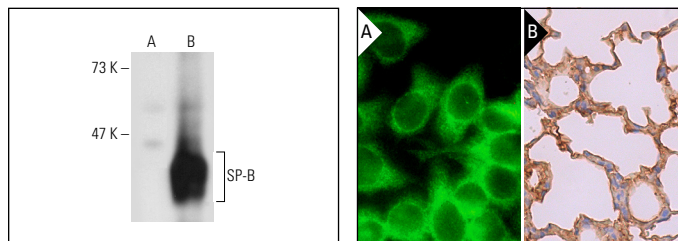
Molecular Weight of SP-B precursor: 43 kDa.

Positive Controls: mouse lung extract: sc-2390, SP-B (h): 293T Lysate: sc-115028 or WI-38 whole cell lysate: sc-364260.

## STORAGE

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

## DATA



SP-B (F-2): sc-133143. Western blot analysis of SP-B expression in non-transfected: sc-117752 (A) and human SP-B transfected: sc-115028 (B) 293T whole cell lysates.

SP-B (F-2): sc-133143. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded mouse lung tissue showing cytoplasmic staining of pneumocytes and macrophages (B).

## SELECT PRODUCT CITATIONS

- Rehan, V.K., et al. 2011. Thirdhand smoke: a new dimension to the effects of cigarette smoke on the developing lung. *Am. J. Physiol. Lung Cell. Mol. Physiol.* 301: L1-L8.
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- Shen, Y.Q., et al. 2020. MicroRNA-431 inhibits the expression of surfactant proteins through the BMP4/actin/TGF-β signaling pathway by targeting SMAD4. *Int. J. Mol. Med.* 45: 1571-1582.
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- Solorio-Rodríguez, A., et al. 2020. *In vitro* cytotoxicity study of superparamagnetic iron oxide and silica nanoparticles on pneumocyte organelles. *Toxicol. In Vitro* 72: 105071.
- Banfi, C., et al. 2021. Immature circulating SP-B, bound to HDL, represents an early sign of smoke-induced pathophysiological alterations. *Biomolecules* 11: 551.
- Ebisudani, T., et al. 2021. Direct derivation of human alveolospheres for SARS-CoV-2 infection modeling and drug screening. *Cell Rep.* 35: 109218.

## RESEARCH USE

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

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