

# SP-B (N-19): sc-7701

## 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 and 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 microbes.

## REFERENCES

1. Glasser, S.W., Korfhagen, T.R., Bruno, M.D., Dey, C. and Whitsett, J.A. 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. *Ann. Rev. Physiol.* 53: 375-394.
3. Johansson, J., Jornvall, H. and Curstedt, T. 1992. Human surfactant polypeptide SP-B. Disulfide bridges, C-terminal end and peptide analysis of the airway form. *FEBS Lett.* 301: 165-167.
4. Crouch, E., Rust, K., Veile, R., Donis-Keller, H. and Grosso, L. 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.
5. Rooney, S.A., Young, S.L. and Mendelson, C.R. 1994. Molecular and cellular processing of lung surfactant. *FASEB J.* 8: 957-967.
6. Johansson, J. and Curstedt, T. 1997. Molecular structures and interactions of pulmonary surfactant components. *Eur. J. Biochem.* 244: 675-693.
7. Reid, K.B. 1998. Functional roles of the lung surfactant proteins SP-A and SP-D in innate immunity. *Immunobiology* 199: 200-207.
8. Wert, S.E., Yoshida, M., LeVine, A.M., Ikegami, M., Jones, T., Ross, G.F., Fisher, J.H., Korfhagen, T.R. and Whitsett, J.A. 2000. Increased metalloproteinase activity, oxidant production and emphysema in SP-D gene-inactivated mice. *Proc. Natl. Acad. Sci. USA* 97: 5972-5977.
9. McCormack, F.X. and Whitsett, J.A. 2002. The pulmonary collectins, SP-A and SP-D, orchestrate innate immunity in the lung. *J. Clin. Invest.* 109: 707-712.

## CHROMOSOMAL LOCATION

Genetic locus: SFTPB (human) mapping to 2p11.2.

## SOURCE

SP-B (N-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of SP-B of human origin.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-7701 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

SP-B (N-19) is recommended for detection of SP-B of 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)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

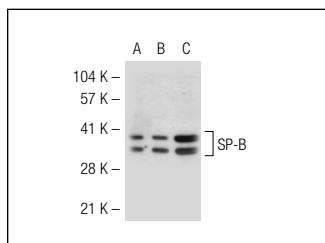
Suitable for use as control antibody for SP-B siRNA (h): sc-36537, SP-B shRNA Plasmid (h): sc-36537-SH and SP-B shRNA (h) Lentiviral Particles: sc-36537-V.

Molecular Weight of SP-B precursor: 43 kDa.

Molecular Weight of mature SP-B: 9 kDa.

Positive Controls: WI-38 whole cell lysate.

## DATA



SP-B (N-19): sc-7701. Western blot analysis of SP-B expression in non-transfected 293T: sc-117752 (A), human SP-B transfected 293T: sc-115028 (B) and Raji (C) whole cell lysates.

## STORAGE

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

## RESEARCH USE

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



Try **SP-B (F-2): sc-133143** or **SP-B (1B9): sc-53137**, our highly recommended monoclonal alternatives to SP-B (N-19).