

## SP-B (R-19): sc-7704

### 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., 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.

### CHROMOSOMAL LOCATION

Genetic locus: *Sftpb* (mouse) mapping to 6 C1.

### SOURCE

SP-B (R-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of SP-B of mouse 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-7704 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

### APPLICATIONS

SP-B (R-19) is recommended for detection of SP-B of mouse and rat 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).

SP-B (R-19) is also recommended for detection of SP-B in additional species, including equine.

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

Molecular Weight of SP-B precursor: 43 kDa.

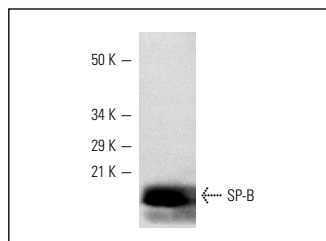
Molecular Weight of mature SP-B: 9 kDa.

Positive Controls: mouse lung extract: sc-2390.

### 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 (R-19): sc-7704. Western blot analysis of the proteolytically processed mature form of SP-B expression in mouse lung extract.

### SELECT PRODUCT CITATIONS

1. Sanchez-Esteban, J., et al. 2001. Mechanical stretch promotes alveolar epithelial type II cell differentiation. *J. Appl. Physiol.* 91: 589-595.
2. Robin, A.M., et al. 2006. Stromal cell-derived factor 1 $\alpha$  mediates neural progenitor cell motility after focal cerebral ischemia. *J. Cereb. Blood Flow Metab.* 26: 125-134.
3. Li, Y., et al. 2007. Lysosomal acid lipase over-expression disrupts lamellar body genesis and alveolar structure in the lung. *Int. J. Exp. Pathol.* 88: 427-436.
4. Mimura, N., et al. 2007. Aberrant quality control in the endoplasmic reticulum impairs the biosynthesis of pulmonary surfactant in mice expressing mutant BIP. *Cell Death Differ.* 14: 1475-1485.
5. Debeer, A., et al. 2010. Antenatal fetal VEGF therapy to promote pulmonary maturation in a preterm rabbit model. *Early Hum. Dev.* 86: 99-105.
6. Román-Pérez, M., et al. 2013. Pulmonary GLP-1 receptor increases at birth and exogenous GLP-1 receptor agonists augmented surfactant-protein levels in litters from normal and nitrofen-treated pregnant rats. *Endocrinology* 154: 1144-1155.

### RESEARCH USE

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

### PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.

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