

# SP-D (10H11): sc-33730

## 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

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2. Hawgood, S., et al. 1991. Structures and properties of the surfactant-associated proteins. *Annu. Rev. Physiol.* 53: 375-394.
3. Johansson, J., et al. 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., 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.
5. Rooney, S.A., et al. 1994. Molecular and cellular processing of lung surfactant. *FASEB J.* 8: 957-967.
6. Johansson, J., et al. 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., et al. 2000. Increased metalloproteinase activity, oxidant production and emphysema in surfactant protein 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: SFTPD (human) mapping to 10q22.3.

## SOURCE

SP-D (10H11) is a mouse monoclonal antibody raised against purified SP-D of human origin.

## RESEARCH USE

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

## PRODUCT

Each vial contains 100 µg IgG<sub>1</sub> in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

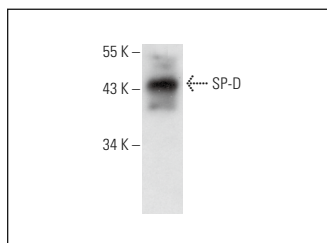
SP-D (10H11) is recommended for detection of SP-D of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for SP-D siRNA (h): sc-36541, SP-D shRNA Plasmid (h): sc-36541-SH and SP-D shRNA (h) Lentiviral Particles: sc-36541-V.

Molecular Weight of SP-D: 43 kDa.

Positive Controls: human lung extract: sc-363767.

## DATA



SP-D (10H11): sc-33730. Western blot analysis of SP-D expression in human lung tissue extract.

## STORAGE

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

## PROTOCOLS

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