

SP-D (12G5): sc-80622

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.
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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., et al. 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 10q22.2-q23.1; Sftpd (mouse) mapping to 14 B.

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 or our catalog for detailed protocols and support products.

SOURCE

SP-D (12G5) is a mouse monoclonal antibody raised against recombinant SP-D of human origin.

PRODUCT

Each vial contains 100 µg IgG₁ in 1.0 ml PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

SP-D (12G5) is recommended for detection of SP-D of mouse 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)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

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.

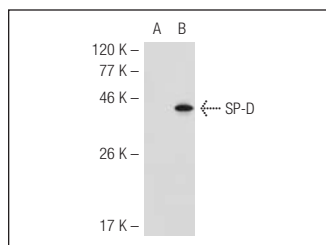
Molecular Weight of SP-D: 43 kDa.

Positive Controls: human lung extract.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:32,000) or Cruz Marker™ compatible goat anti-mouse IgG-HRP: sc-2031 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-mouse IgG-FITC: sc-2010 (dilution range: 1:100-1:400) or goat anti-mouse IgG-TR: sc-2781 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 4) Immunohistochemistry: use ImmunoCruz™: sc-2050 or ABC: sc-2017 mouse IgG Staining Systems.

DATA



SP-D (12G5): sc-80622. Western blot analysis of SP-D expression in non-transfected: sc-117752 (A) and mouse SP-D transfected: sc-123722 (B) 293T whole cell lysates.

RESEARCH USE

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