SANTA CRUZ BIOTECHNOLOGY, INC.

SP-D (245-01): sc-59695

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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.

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., et al. 1991. Structures and properties of the surfactant-associated proteins. Annu. Rev. Physiol. 53: 375-394.
3. Johansson, J., et al. T. 1992. Human surfactant polypeptide SP-B. Disulfide bridges, C-terminal end, and peptide analysis of the airway form. FEBS Lett. 301: 165-167.

CHROMOSOMAL LOCATION

Genetic locus: SFTPD (human) mapping to 10q22.3; Sftpd (mouse) mapping to 14 B.

SOURCE

SP-D (245-01) is a mouse monoclonal antibody raised against recombinant SP-D of human origin.

PRODUCT

Each vial contains 100 µg IgG_1 in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

SP-D (245-01) is recommended for detection of SP-D of mouse, rat 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 siRNA (m): sc-36542, SP-D shRNA Plasmid (h): sc-36541-SH, SP-D shRNA Plasmid (m): sc-36542-SH, SP-D shRNA (h) Lentiviral Particles: sc-36541-V and SP-D shRNA (m) Lentiviral Particles: sc-36542-V.

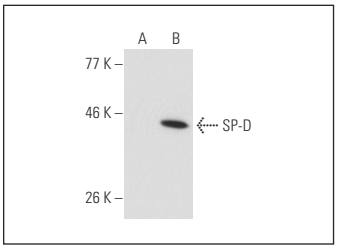
Molecular Weight of SP-D: 43 kDa.

Positive Controls: SP-D (m): 293T Lysate: sc-123722 or human lung extract: sc-363767.

STORAGE

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

DATA



SP-D (245-01): sc-59695. 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.

SELECT PRODUCT CITATIONS

1. Ohlmeier, S., et al. 2008. Proteomics of human lung tissue identifies surfactant protein A as a marker of chronic obstructive pulmonary disease. J. Proteome Res. 7: 5125-5132.
2. Banerjee, E.R., et al. 2012. Human embryonic stem cells differentiated to lung lineage-specific cells ameliorate pulmonary fibrosis in a xenograft transplant mouse model. PLoS ONE 7: e33165.
3. Moliva, J.I., et al. 2014. Molecular composition of the alveolar lining fluid in the aging lung. Age 36: 9633.
4. Haase, M.G., et al. 2014. Down-regulation of heat shock protein HSP90ab1 in radiation-damaged lung cells other than mast cells. J. Histochem. Cytochem. 62: 355-368.
5. Wang, Y., et al. 2016. Ipr1 modified BCG as a novel vaccine induces stronger immunity than BCG against tuberculosis infection in mice. Mol. Med. Rep. 14: 1756-1764.
6. Shifeng, L., et al. 2019. Ac-SDKP increases α-TAT 1 and promotes the apoptosis in lung fibroblasts and epithelial cells double-stimulated with TGF-β1 and silica. Toxicol. Appl. Pharmacol. 369: 17-29.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.