SANTA CRUZ BIOTECHNOLOGY, INC.

SP-D (C-6): sc-25324

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.

CHROMOSOMAL LOCATION

Genetic locus: SFTPD (human) mapping to 10q22.3.

SOURCE

SP-D (C-6) is a mouse monoclonal antibody raised against amino acids 1-120 of pulmonary surfactant protein D (SP-D) of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

SP-D (C-6) is available conjugated to agarose (sc-25324 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-25324 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-25324 PE), fluorescein (sc-25324 FITC), Alexa Fluor® 488 (sc-25324 AF488), Alexa Fluor® 546 (sc-25324 AF546), Alexa Fluor® 594 (sc-25324 AF594) or Alexa Fluor® 647 (sc-25324 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-25324 AF680) or Alexa Fluor® 790 (sc-25324 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

SP-D (C-6) is recommended for detection of SP-D of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:500), 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), immunohistochemistry (including paraffin-embedded sections) (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-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 or mouse lung extract: sc-2390.

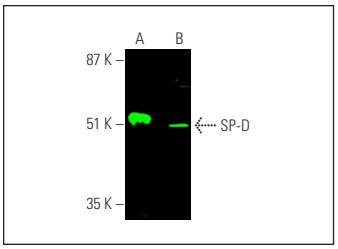
RESEARCH USE

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

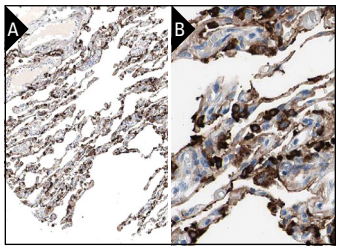
STORAGE

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

DATA



SP-D (C-6): sc-25324. Near-infrared western blot analysis of SP-D expression in human lung (**A**) and mouse lung (**B**) tissue extracts. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgGκ BP-CFL 680: sc-516180.



SP-D (C-6): sc-25324. Immunoperoxidase staining of formalin fixed, paraffin-embedded human lung tissue showing cytoplasmic staining of alveolar cells and macrophages at low (**A**) and high (**B**) magnification. Kindly provided by The Swedish Human Protein Atlas (HPA) program.

SELECT PRODUCT CITATIONS

1. Maitra, M., et al. 2010. Surfactant protein A2 mutations associated with pulmonary fibrosis lead to protein instability and endoplasmic reticulum stress. J. Biol. Chem. 285: 22103-22113.
2. Kim, I.J., et al. 2013. Rewiring of human lung cell lineage and mitotic networks in lung adenocarcinomas. Nat. Commun. 4: 1701.
3. Li, D., et al. 2021. Lower oligomeric form of surfactant protein D in murine acute lung injury induces M1 subtype macrophages through calreticulin/p38 MAPK signaling pathway. Front. Immunol. 12: 687506.
4. Ciccimarra, R., et al. 2022. The normal and fibrotic mouse lung classified by spatial proteomic analysis. Sci. Rep. 12: 8742.
5. Chen, P., et al. 2023. Gestational diabetes mellitus impedes fetal lung development through exosome-dependent crosstalk between trophoblasts and lung epithelial cells. Int. J. Nanomedicine 18: 641-657.
6. de Souza Xavier Costa, N., et al. 2024. Lung tissue expression of epithelial injury markers is associated with acute lung injury severity but does not discriminate sepsis from ARDS. Respir. Res. 25: 129.

PROTOCOLS

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