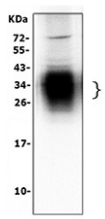
SFTPA1 Antibody / Surfactant Protein A (R30413)

Catalog No.	Formulation	Size
R30413	0.2mg/ml in PBS with 50% glycerol and 0.025% sodium azide	100 ug

Bulk quote request

Availability	1-3 business days
Species Reactivity	Human, Rat
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Antigen affinity
UniProt	Q8IWL2
Applications	Western Blot : 0.5-1ug/ml
Limitations	This SFTPA1 antibody is available for research use only.



Western blot analysis of SFTPA1 expression. Rat lung tissue lysate (lane 1) was separated by SDS-PAGE and probed with anti-SFTPA1 antibody. A strong immunoreactive signal is detected as a broad band spanning approximately 26-35 kDa, corresponding to Surfactant Protein A (SFTPA1). The predicted molecular weight of SFTPA1 based on its amino acid sequence is approximately 26 kDa; the observed higher apparent molecular weight range and band broadening are consistent with extensive glycosylation and heterogeneous post-translational modification of this secreted surfactant protein, which commonly results in diffuse or smeared bands on SDS-PAGE.

Description

SFTPA1 antibody targets Surfactant Protein A, encoded by the SFTPA1 gene. Surfactant Protein A is a secreted glycoprotein and a major component of pulmonary surfactant, where it plays essential roles in maintaining alveolar stability and innate immune defense in the lung. SFTPA1 belongs to the collectin family of C-type lectins, which are characterized by a collagen-like region and a carbohydrate recognition domain that mediates binding to pathogens and host molecules.

Functionally, Surfactant Protein A contributes to the regulation of surface tension within the alveoli, supporting normal

lung compliance and preventing alveolar collapse during respiration. In addition to its biophysical role, SFTPA1 participates in immune surveillance by binding bacteria, viruses, and fungi, enhancing their clearance through opsonization and modulation of macrophage activity. An SFTPA1 antibody supports studies focused on pulmonary biology, host defense mechanisms, and surfactant-associated immune regulation.

SFTPA1 expression is highly enriched in the lung, particularly in alveolar type II epithelial cells and Clara cells, which are responsible for surfactant production and secretion. Subcellular localization is primarily within secretory granules prior to release, with extracellular localization in the alveolar lining fluid following secretion. Expression and abundance of Surfactant Protein A can vary in response to developmental stage, environmental exposures, and inflammatory stimuli.

From a disease relevance perspective, altered SFTPA1 expression or function has been investigated in respiratory disorders such as acute lung injury, pulmonary infections, chronic obstructive pulmonary disease, and interstitial lung disease. Genetic variation and dysregulation of surfactant proteins may influence susceptibility to lung inflammation and impaired host defense. At the molecular level, Surfactant Protein A assembles into oligomeric structures that are critical for its functional interactions with lipids and immune receptors. SFTPA1 antibody reagents support research applications examining lung physiology, surfactant homeostasis, and immune responses at the air-liquid interface, with NSJ Bioreagents providing reagents intended for research use.

Application Notes

The stated application concentrations are suggested starting amounts. Titration of the SFTPA1 antibody may be required due to differences in protocols and secondary/substrate sensitivity.

Immunogen

An amino acid sequence from the C-terminus of human SFTPA1 (KEQCVEMYTDGQWNDR) was used as the immunogen for this SFTPA1 antibody.

Storage

Store the SFTPA1 antibody at -20oC.