

APA890Mu61 100µg
Active Pulmonary Surfactant Associated Protein A1 (SFTPA1)
Organism Species: *Mus musculus* (Mouse)
Instruction manual

FOR RESEARCH USE ONLY
NOT FOR USE IN CLINICAL DIAGNOSTIC PROCEDURES

13th Edition (Revised in Aug, 2023)

[PROPERTIES]

Source: Eukaryotic expression.

Host: 293F cell

Residues: Asn21~Phe248

Tags: N-terminal His-tag

Purity: >95%

Endotoxin Level: <1.0EU per 1µg (determined by the LAL method).

Buffer Formulation: PBS, pH7.4, containing 5% Trehalose .

Original Concentration: 200µg/mL

Applications: Activity Assays.

(May be suitable for use in other assays to be determined by the end user.)

Predicted isoelectric point: 4.9

Predicted Molecular Mass: 25.7kDa

Accurate Molecular Mass: 40kDa as determined by SDS-PAGE reducing conditions.

Phenomenon explanation:

The possible reasons that the actual band size differs from the predicted are as follows:

1. Splice variants: Alternative splicing may create different sized proteins from the same gene.
2. Relative charge: The composition of amino acids may affects the charge of the protein.
3. Post-translational modification: Phosphorylation, glycosylation, methylation etc.
4. Post-translation cleavage: Many proteins are synthesized as pro-proteins, and then cleaved to give the active form.
5. Polymerization of the target protein: Dimerization, multimerization etc.

[USAGE]

Reconstitute in 10mM PBS (pH7.4) to a concentration of 0.1-1.0 mg/mL. Do not vortex.

[STORAGE AND STABILITY]

Storage: Avoid repeated freeze/thaw cycles.

Store at 2-8°C for one month.

Aliquot and store at -80°C for 12 months.

Stability Test: The thermal stability is described by the loss rate. The loss rate was determined by accelerated thermal degradation test, that is, incubate the protein at 37°C for 48h, and no obvious degradation and precipitation were observed. The loss rate is less than 5% within the expiration date under appropriate storage condition.

[SEQUENCE]

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NGTEVCAGSPGIPGTPGNHGLPGRDGRDGIKGDPPGPMGPPGMPGLPGRDGLPGAPGAPGEHGDKGEPGERGLPGFPAYLDEELQ  
TASYEIKHQILQTMGVLSLQGSMLSVGDKVFSTNGQSVNFDIIREMCTRAGGHIAAPRNPEENEAIASITKKYNTYPYLGVIEGQTPG  
DFHYLDGASVNYTNWYPGEPRGRGKEKCVEMYTDGKWNKGLQYRLAICEF
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[ACTIVITY]

Pulmonary Surfactant Associated Protein A1 (SFTPA1) is a vital innate immune lectin abundantly expressed in mammalian lung alveolar epithelial type II cells. Encoded by the SFTPA1 gene, it serves as a core component of pulmonary surfactant, effectively lowering alveolar surface tension to stabilize lung expansion and avoid pulmonary atelectasis during respiration. Beyond mechanical respiratory protection, SFTPA1 mediates host defense by recognizing microbial surface antigens, facilitating pathogen clearance and balancing pulmonary inflammatory responses. Abnormal expression or structural defects of this protein are closely correlated with multiple chronic lung disorders and neonatal respiratory diseases, maintaining critical physiological and immunological homeostasis in the respiratory system. SFTPA1 interacts with SLC34A2 to regulate cellular phosphate uptake and pulmonary surfactant metabolic turnover. Briefly, SLC34A2 was diluted

serially in PBS with 0.01% BSA (pH 7.4). Duplicate samples of 100 μ L were then transferred to SFTPA1-coated microtiter wells and incubated for 1h at 37°C. Wells were washed with PBST and incubated for 1h with anti-SLC34A2 pAb, then aspirated and washed 3 times. After incubation with HRP labelled secondary antibody for 1h at 37°C, wells were aspirated and washed 5 times. With the addition of substrate solution, wells were incubated 15-25 minutes at 37°C. Finally, add 50 μ L stop solution to the wells and read at 450/630nm immediately. Measured by its binding ability in a functional ELISA. When recombinant mouse SFTPA1 is immobilized at 2 μ g/mL (100 μ L/well), the concentration of SLC34A2 that produces 50% optimal binding response is found to be approximately 0.113 μ g/mL.

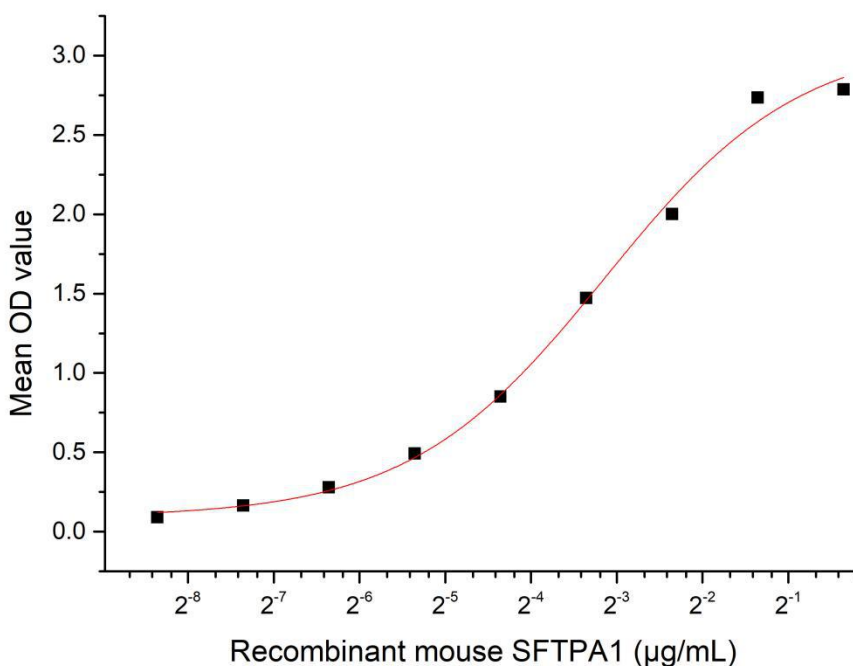


Figure 1. The binding activity of recombinant mouse SFTPA1 and human SLC34A2

Genomic coordinates: chr10:117,689,100-117,689,100



[IMPORTANT NOTE]

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