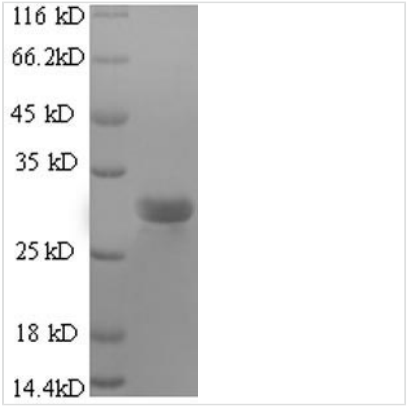
Recombinant Bovine Pulmonary surfactant-associated protein C (SFTPC)

Product Code	CSB-EP021174BOe0
Relevance	Pulmonary surfactant associated proteins promote alveolar stability by lowering the surface tension at the air-liquid interface in the peripheral air spaces.
Abbreviation	Recombinant Bovine SFTPC protein
Storage	The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.
Uniprot No.	P15783
Alias	Pulmonary surfactant-associated proteolipid SPL(Val)
Product Type	Recombinant Protein
Immunogen Species	Bos taurus (Bovine)
Purity	Greater than 90% as determined by SDS-PAGE.
Sequence	LIPCCPVNIKRLLIVVVVVVLVVVVIVGALLMGL
Research Area	Others
Source	E.coli
Target Names	SFTPC
Expression Region	25-58aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	N-terminal GST-tagged
Mol. Weight	30.6kDa
Protein Length	Full Length of Mature Protein
Image	 (Tris-Glycine gel) Discontinuous SDS-PAGE (reduced) with 5% enrichment gel and 15% separation gel.

Description

Recombinant Bovine Pulmonary surfactant-associated protein C (SFTPC) is produced in E. coli with an N-terminal GST tag, which appears to help with solubility and makes purification more straightforward. The protein represents the full length of the mature form, comprising the amino acid sequence 25-58. SDS-PAGE verification shows the product achieves a purity level exceeding 90%, which should make it suitable for sophisticated research applications.

Pulmonary surfactant-associated protein C plays a crucial role in the pulmonary surfactant system - it's essential for reducing surface tension in the lungs and preventing alveolar collapse. This protein is a vital component in respiratory research, contributing to our understanding of lung function and disorders. Its study may be significant in exploring mechanisms underlying respiratory diseases and potential therapeutic interventions.

Potential Applications

Note: The applications listed below are based on what we know about this protein's biological functions, published research, and experience from experts in the field. However, we haven't fully tested all of these applications ourselves yet. We'd recommend running some preliminary tests first to make sure they work for your specific research goals.

1. In Vitro Protein-Protein Interaction Studies

This recombinant bovine SFTPC can be used to investigate protein-protein interactions within the pulmonary surfactant system through pull-down assays. The N-terminal GST tag allows for immobilization on glutathione-sepharose beads to capture potential binding partners from lung tissue lysates or purified protein preparations. The mature protein region (25-58aa) represents the biologically relevant domain that would likely interact with other surfactant proteins or lipid components under physiological conditions. This approach might help identify novel binding partners and characterize how surfactant protein complexes form at the molecular level.

2. Antibody Development and Validation

The recombinant protein serves as what appears to be an ideal antigen for generating specific antibodies against bovine SFTPC or for validating existing ones. The high purity (>90%) should minimize cross-reactivity during immunization protocols, while the GST tag can be used for affinity purification of the antigen. Researchers can use this protein in ELISA-based screening of hybridoma clones or for testing antibody specificity in Western blot applications. The defined expression region (25-58aa) allows for precise epitope mapping studies to determine where antibodies bind.

3. Comparative Species Analysis in Surfactant Research

This bovine SFTPC can be used in comparative studies examining species-specific differences in pulmonary surfactant protein structure and function across mammalian models. Researchers can perform side-by-side biochemical

analyses comparing bovine SFTPC with human or other species variants to understand evolutionary conservation and divergence. The standardized expression system and purification approach should enable consistent preparation for cross-species binding studies or structural comparisons using techniques such as circular dichroism spectroscopy.

4. GST-Tag Based Affinity Purification Studies

The N-terminal GST tag makes this protein suitable for developing affinity purification protocols to isolate SFTPC-associated complexes from biological samples. Researchers can use glutathione affinity chromatography to capture protein complexes or study how SFTPC binds with lipid vesicles or other surfactant components. This application may be particularly valuable for biochemical characterization studies where the GST tag provides a reliable handle for protein immobilization and subsequent analysis of bound materials.

Reconstitution	We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Please reconstitute protein in deionized sterile water to a concentration of 0.1-1.0 mg/mL.We recommend to add 5-50% of glycerol (final concentration) and aliquot for long-term storage at -20°C/-80°C. Our default final concentration of glycerol is 50%. Customers could use it as reference.
Shelf Life	The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.