Data Sheet (Cat.No.TMPY-01634)

TargetMol

Surfactant protein D/SFTPD Protein, Rhesus, Recombinant (His)

General Information

Synonyms:	surfactant protein D
Protein Construction:	A DNA sequence encoding the rhesus SFTPD (NP_001035283.1) (Met 1-Phe 375) precursor was expressed with a C-terminal polyhistidine tag. Predicted N terminal: Asp 22
Species:	Rhesus
Expression Host:	HEK293 Cells
Accession:	G7N227
Molecular Weight:	36.8 kDa (predicted)

QC Testing

Biological Activity:	Activity testing is in progress. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.
Purity:	> 95 % as determined by SDS-PAGE
Endotoxin:	< 1.0 EU/μg of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 μm filter, containing PBS, pH 7.4. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:

A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

Surfactant pulmonary-associated protein D, also known as SFTPD and SP-D, is a member of the collectin family of C-type lectins that is synthesized in many tissues including respiratory epithelial cells in the lung, and contains one C-type lectin domain and one collagen-like domain. The polymorphic variation in the N-terminal domain of the SP-D molecule influences oligomerization, function, and the concentration of the molecule in serum. SFTPD is produced primarily by alveolar type II cells and nonciliated bronchiolar cells in the lung and is constitutively

secreted into the alveoli where it influences surfactant homeostasis, effector cell functions, and host defense. It is upregulated in a variety of inflammatory and infectious conditions including Pneumocystis pneumonia and asthma. SFTPD is humoral molecules of the innate immune system, and is considered a functional candidate in chronic periodontitis. Besides, it is involved in the development of acute and chronic inflammation of the lung. Several human lung diseases are characterized by decreased levels of bronchoalveolar SFTPD. Thus, recombinant SFTPD has been proposed as a therapeutical option for cystic fibrosis, neonatal lung disease and smoking-induced emphysema. Furthermore, SFTPD serum levels can be used as disease activity markers for interstitial lung diseases.

Reference

Leth-Larsen R,et al.(2005) A common polymorphism in the SFTPD gene influences assembly, function, and concentration of surfactant protein D. J Immunol. 174(3): 1532-8.
Moran AP,et al.(2005) Role of surfactant protein D (SP-D) in innate immunity in the gastric mucosa: evidence of interaction with Helicobacter pylori lipopolysaccharide. J Endotoxin Res. 11(6): 357-62.
Hartl D,et al.(2006) Surfactant protein D in human lung diseases. Eur J Clin Invest. 36(6): 423-35.
Krueger M,et al.(2006) Amino acid variants in Surfactant protein D are not associated with bronchial asthma. Pediatr Allergy Immunol. 17(1): 77-81.
Glas J,et al.(2008) Increased plasma concentration of surfactant protein D in chronic periodontitis independent of SFTPD genotype: potential role as a biomarker. Tissue Antigens. 72(1): 21-8.

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