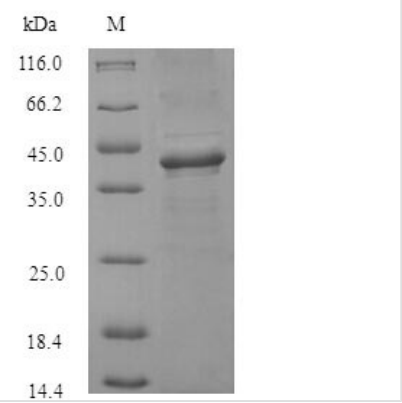
Recombinant Staphylococcus aureus Clumping factor A (clfA), partial

Product Code	CSB-YP692021FLBb0
Relevance	Cell surface-associated protein implicated in virulence. Promotes bacterial attachment exclusively to the gamma-chain of human fibrinogen. Induces formation of bacterial clumps (By similarity)
Abbreviation	Recombinant Staphylococcus aureus clfA protein, partial
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.	Q5HHM8
Alias	Fibrinogen receptor A Fibrinogen-binding protein A
Product Type	Recombinant Protein
Immunogen Species	Staphylococcus aureus (strain COL)
Purity	Greater than 90% as determined by SDS-PAGE.
Sequence	GTDITNQLTNVTVGIDSGTTVYPHQAGYVKLNYGFSVPNSAVKGDTFKITVPKE LNLNGVTSTAKVPPIMAGDQVLANGVIDSDGNVIYTFTDYVNTKDDVKATLTMP AYIDPENVKKTGNVTLATGIGSTTANKTVLVDYEKYGKFYNLSIKGTIDQIDKTN NTYRQTIYVNPSGDNVIAPVLTGNLKPNTDSNALIDQQNTSIKVYKVDNAADLS ESYFVNPENFEDVTNSVNITFPNPNQYKVEFNTPDDQITTPYIVVVNGHIDPNS KGDLALRSTLYGYNSNIIWRSMSWDNEVAFNNGSGSGDGIDKPVVPEQPDEP GEIEPIPE
Research Area	others
Source	Yeast
Target Names	clfA
Expression Region	229-559aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	N-terminal 10xHis-tagged
Mol. Weight	38.5kDa
Protein Length	Partial
Image	



(Tris-Glycine gel) Discontinuous SDS-PAGE (reduced) with 5% enrichment gel and 15% separation gel.

Description

Recombinant Staphylococcus aureus Clumping factor A (clfA) is produced in a yeast expression system, covering amino acids 229-559. This partial protein comes with an N-terminal 10xHis-tag for easier purification and detection. The product achieves purity levels over 90%, as confirmed by SDS-PAGE analysis. It's designed strictly for research use and appears to deliver reliable performance in experimental contexts without endotoxin interference.

Clumping factor A plays a crucial role in how Staphylococcus aureus causes disease, particularly in bacterial adhesion and aggregation. The protein binds to fibrinogen—a process that seems essential for colonization and infection of host tissues. Understanding clfA's function may be vital for developing insights into bacterial behavior and potential therapeutic strategies.

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. Fibrinogen Binding Studies

This recombinant clfA fragment (229-559aa) can help investigate how Staphylococcus aureus adheres to fibrinogen at the molecular level, since clumping factor A appears to mediate bacterial attachment to this host protein. The N-terminal His-tag makes purification and immobilization straightforward for surface plasmon resonance or ELISA-based binding assays. Researchers might examine binding kinetics, specificity, and how mutations within this region affect fibrinogen interaction. High purity (>90%) should ensure reliable and reproducible binding data without interference from contaminating proteins.

2. Antibody Development and Characterization

The purified recombinant clfA protein works well as an immunogen for generating polyclonal or monoclonal antibodies against Staphylococcus aureus clumping factor A. This specific amino acid region (229-559aa) represents a defined antigenic target that could be used to raise antibodies with known

epitope specificity. The His-tag allows easy purification and quantification of the antigen for immunization protocols and subsequent antibody validation assays. These antibodies might prove valuable as research tools for studying S. aureus pathogenesis and bacterial surface protein expression.

3. Protein-Protein Interaction Screening

The His-tagged clfA fragment works in pull-down assays to identify novel host cell proteins that interact with clumping factor A during bacterial infection. The recombinant protein can be immobilized on nickel-affinity matrices and incubated with cell lysates or purified protein libraries to capture potential binding partners. Mass spectrometry analysis of pulled-down proteins may reveal previously unknown interactions relevant to S. aureus pathogenesis. This approach offers insights into the molecular basis of bacterial adhesion and host cell recognition mechanisms.

4. Structural and Biochemical Characterization

This recombinant clfA fragment provides material for detailed structural studies including X-ray crystallography, NMR spectroscopy, or cryo-electron microscopy to understand the three-dimensional architecture of this adhesion domain. High purity and defined boundaries (229-559aa) make it suitable for biophysical analyses such as circular dichroism spectroscopy to assess secondary structure content and thermal stability. Dynamic light scattering experiments can determine the oligomerization state and solution behavior of this protein region. Such structural information appears crucial for understanding the molecular basis of clumping factor A function.

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.