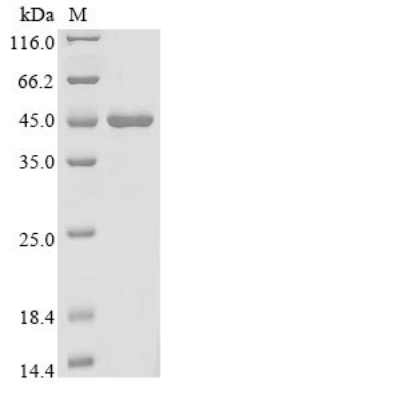
Recombinant Paeniclostridium sordellii Sialidase

Product Code	CSB-BP324484CMG
Abbreviation	Recombinant Paeniclostridium sordellii Sialidase 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.	P15698
Form	Liquid or Lyophilized powder
Storage Buffer	If the delivery form is liquid, the default storage buffer is Tris/PBS-based buffer, 5%-50% glycerol. If the delivery form is lyophilized powder, the buffer before lyophilization is Tris/PBS-based buffer, 6% Trehalose.
Product Type	Recombinant Protein
Immunogen Species	Paeniclostridium sordellii (Clostridium sordellii)
Purity	Greater than 90% as determined by SDS-PAGE.
Sequence	SNLNTTNEPQKTTVFNKNDNTWNAQYFRIPSLQTLADGTMLAFSDIRYNGAED HAYIDIGAAKSTDNGQTWDYKTVMENDRIDSTFSRVMDSTTVVTDTGRIILIAG SWNKNGNWASSTTSLRSDWSVQMVYSDDNGETWSDKVDLTTNKARIKNQPS NTIGWLAGVGSGIVMSDGTIVMPIQIALRENNANNYYSSVIYSKDNGETWTMG NKVPDPKTSENMVIELDGALIMSSRNDGKNYRASYISYDMGSTWEVYDPLHNK ISTGNGSGCQGSFIKVTAKDGHRLGFISAPKNTKGGYVRDNITVYMIDFDDLSK GIRELCSPYPEDGNSSGGGYSCLSFNDGKLSILYEANGNIEYKDLTDYYLSIEN NKKLK
Research Area	Others
Source	Baculovirus
Target Names	N/A
Expression Region	28-404aa
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 and C-terminal Myc-tagged
Mol. Weight	45.7 kDa
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 Paeniclostridium sordellii Sialidase gets expressed in a baculovirus system and covers the full length of the mature protein—specifically the 28-404 amino acid region. The protein carries an N-terminal 10xHis tag and a C-terminal Myc tag, which makes purification and detection much easier. It achieves a purity level greater than 90%, as verified by SDS-PAGE, making it suitable for research applications.

Sialidase from Paeniclostridium sordellii is an enzyme that cleaves sialic acid residues from glycoproteins and glycolipids. This activity appears to be essential in various biological processes, including cellular recognition, adhesion, and immune responses. Understanding how sialidases function and are regulated may provide insights into microbial pathogenicity and host-pathogen interactions. This makes the enzyme a valuable tool in microbiological and biochemical research.

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. Biochemical Characterization of Bacterial Sialidase Activity

This recombinant Paeniclostridium sordellii sialidase can be used to investigate the enzymatic properties and substrate specificity of bacterial neuraminidases through in vitro assays. Researchers might examine the protein's ability to cleave sialic acid residues from various glycoconjugates using fluorogenic or chromogenic substrates. The dual His and Myc tags make protein purification and detection straightforward, enabling detailed kinetic studies and pH/temperature optimization experiments. Such characterization would likely contribute to understanding the role of sialidases in bacterial pathogenesis and host-pathogen interactions.

2. Comparative Enzyme Studies Across Bacterial Species

The recombinant protein serves as a valuable tool for comparative studies

examining sialidase activity differences between Paeniclostridium sordellii and other bacterial species. Researchers can perform side-by-side enzymatic assays to compare substrate preferences, catalytic efficiency, and inhibitor sensitivity profiles. The standardized expression system and high purity level ensure reproducible results for comparative biochemical analyses. These studies could reveal species-specific adaptations in sialidase function and inform broader understanding of bacterial glycosidase evolution.

3. Antibody Development and Immunological Studies

The dual-tagged recombinant protein can work as an immunogen for generating specific antibodies against Paeniclostridium sordellii sialidase. His and Myc tags allow easy purification and detection during antibody screening processes using techniques such as ELISA or Western blotting. Researchers can develop both polyclonal and monoclonal antibodies for subsequent use in bacterial detection assays or protein localization studies. The high purity level suggests minimal cross-reactivity with other bacterial proteins during immunization protocols.

4. Protein-Protein Interaction Studies

The tagged recombinant sialidase can be used in pull-down assays to identify potential binding partners or substrates from bacterial lysates or host cell extracts. The N-terminal His tag allows for immobilization on metal affinity matrices, while the C-terminal Myc tag provides detection capabilities in subsequent analytical procedures. Researchers can investigate how this enzyme interacts with other bacterial virulence factors or host cell surface molecules. Such interaction studies could reveal novel aspects of bacterial pathogenesis mechanisms involving sialic acid metabolism.

5. Inhibitor Screening and Drug Discovery Research

This recombinant enzyme serves as a target for screening potential sialidase inhibitors in drug discovery research focused on bacterial infections. The standardized protein preparation enables high-throughput screening assays using compound libraries to identify molecules that reduce enzymatic activity. The dual tagging system makes both protein immobilization for screening platforms and detection in various assay formats more straightforward. Identified inhibitors might serve as lead compounds for developing antimicrobial agents targeting bacterial sialidases or as research tools for studying sialidase 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.