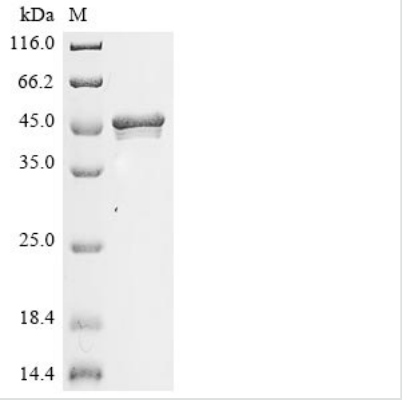
Recombinant Paeniclostridium sordellii Sialidase

Product Code	CSB-EP324484CMG
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	E.coli
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	49.2 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 is produced in E. coli and includes the complete mature protein sequence from amino acids 28 to 404. The protein comes with dual tags—an N-terminal 10xHis-tag and a C-terminal Myc-tag—which makes it useful for different research applications. SDS-PAGE analysis shows the purity is over 90%, suggesting it's appropriate for detailed biochemical work. This protein is meant for research purposes only.

Sialidase from Paeniclostridium sordellii appears to be an enzyme that cleaves sialic acids from glycoproteins and glycolipids. These enzymes have become important tools for studying how cells interact with each other, signal transduction pathways, and bacterial disease mechanisms. This particular enzyme is likely to be valuable for researchers working on carbohydrate metabolism and microbial virulence. It may offer insights into how bacteria cause infections and interact with their hosts.

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

Researchers can use this recombinant sialidase from Paeniclostridium sordellii to study the enzymatic properties and substrate specificity of bacterial neuraminidases through lab-based assays. Scientists are able to determine kinetic parameters, find optimal reaction conditions, and identify substrate preferences using different sialylated compounds. The His and Myc tags make protein purification and detection more straightforward, which allows for thorough biochemical analysis. Studies like these would help explain how sialidases contribute to bacterial disease and metabolism.

2. Comparative Enzyme Studies and Phylogenetic Analysis

The purified protein works well as a tool for comparative studies that examine structural and functional differences between sialidases from various bacterial

species. Scientists can compare enzymatic properties, substrate specificities, and how sensitive different bacterial neuraminidases are to inhibitors. The high purity level suggests researchers can generate reliable comparative data for phylogenetic and evolutionary studies of bacterial sialidase families. This type of work supports broader research into how glycosidase enzymes have evolved and diversified in disease-causing bacteria.

3. Antibody Development and Immunological Studies

The dual-tagged recombinant protein may serve as an immunogen for creating specific antibodies against P. sordellii sialidase in research settings. Both the N-terminal His tag and C-terminal Myc tag make purification and detection easier during antibody screening. Antibodies generated this way could help scientists study sialidase expression, where it's located in cells, and how it functions in bacterial cultures or infected cell models. This approach supports immunological research and helps develop tools for studying P. sordellii biology.

4. Protein-Protein Interaction Studies

Scientists can use the tagged recombinant sialidase in pull-down assays and other interaction studies to find potential binding partners or substrates. The His tag allows immobilization on metal affinity matrices, while the Myc tag helps with detection and confirmation that the protein is present in interaction experiments. Researchers might investigate how this enzyme interacts with host cell surface glycoproteins or other bacterial proteins. Work like this could advance our understanding of the molecular mechanisms behind bacterial adhesion and invasion.

5. Glycobiology Research and Substrate Development

This purified sialidase works as a research tool for glycobiology studies, particularly when investigating sialic acid-containing substrates and developing new analytical methods. Scientists can use the enzyme to modify glycoproteins or glycolipids in controlled lab experiments to study what happens when sialic acids are removed. The high purity appears to ensure consistent and reproducible results in substrate specificity studies and method development. This application supports broader research into carbohydrate chemistry and techniques for analyzing glycoproteins.

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.