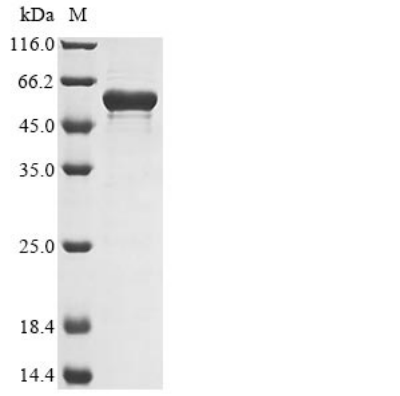
Recombinant Bacillus subtilis Endoglucanase (eglS)

Product Code	CSB-EP319201BRJ
Abbreviation	Recombinant Bacillus subtilis eglS 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.	P10475
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	Bacillus subtilis (strain 168)
Purity	Greater than 85% as determined by SDS-PAGE.
Sequence	AGTKTPVAKNGQLSIKGTQLVNRDGKAVQLKGISSHGLQWYGEYVNKDSLKW LRDDWGITVFRAAMYTADGGYIDNPSVKNKVKEAVEAAKELGIYVIIDWHILND GNPNQNKEKAKEFFKEMSSLYGNTPNVIYEIANEPNGDVNWKRDIKPYAEEVI SVIRKNDPDNIIIVGTGTWSQDVNDAADDQLKDANVMYALHFYAGTHGQFLRD KANYALSKGAPIFVTEWGTSDASGNGGVFLDQSREWLKYLDSKTISWVNWNL SDKQESSSALKPGASKTGGWRLSDLSASGTFVRENILGTKDSTKDIPETPSKD KPTQENGISVQYRAGDGSMNSNQIRPQLQIKNNGNTTVDLKDVTARYWYKAK NKGQNFDCDYAQIGCGNVTHKFVTLHKPKQGADTYLELGFKNGTLAPGASTG NIQLRLHNDDWSNYAQSGDYSFFKSNTFKTTKKITLYDQGKLIWGTEPN
Research Area	Others
Source	E.coli
Target Names	eglS
Expression Region	30-499aa
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 V5-tagged
Mol. Weight	59.7 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 Bacillus subtilis Endoglucanase (eglS) gets expressed in E. coli and includes the complete mature protein sequence, spanning amino acids 30 to 499. The protein carries both an N-terminal 10xHis-tag and a C-terminal V5-tag, which makes purification and detection more straightforward. SDS-PAGE analysis shows it achieves greater than 85% purity, which appears to provide dependable performance for research work.

Endoglucanase from Bacillus subtilis breaks down cellulose by cutting through complex carbohydrates to produce simpler sugars. This enzyme seems central to several biological processes, particularly those related to biomass conversion and energy production. Studying it may help push forward industrial biotechnology research while deepening our grasp of how microbes degrade cellulose.

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. Enzyme Kinetics and Biochemical Characterization Studies

This recombinant endoglucanase allows researchers to measure key enzymatic properties like substrate specificity, optimal pH and temperature ranges, plus kinetic parameters including Km and Vmax values. The high purity level (>85%) combined with the dual-tag design makes it well-suited for controlled laboratory assays using different cellulosic substrates. Scientists can build fundamental activity profiles and draw comparisons between this bacterial endoglucanase and cellulolytic enzymes from other species. The N-terminal His-tag makes purification and quantification simpler for standardized kinetic work.

2. Protein-Protein Interaction Studies

Having both tags (N-terminal His-tag and C-terminal V5-tag) opens up multiple experimental routes for protein interaction screening. The His-tag works well for nickel-affinity pull-down experiments to hunt for potential binding partners in

bacterial cell lysates or purified protein collections. Meanwhile, the V5-tag supports immunoprecipitation studies with anti-V5 antibodies to confirm interactions discovered through His-tag pull-downs. This dual approach may help cut down false positives in interaction research.

3. Antibody Development and Immunoassay Applications

The recombinant protein makes a solid antigen for creating specific antibodies against Bacillus subtilis endoglucanase using conventional immunization methods. High purity levels suggest minimal contamination that might otherwise cause cross-reactive antibodies. The V5-tag enables sandwich ELISA setups where anti-V5 antibodies function as capture or detection agents alongside newly created anti-endoglucanase antibodies. These immunological tools could then help detect endoglucanase expression in bacterial cultures or environmental samples.

4. Structural Biology and Protein Folding Studies

The purified recombinant protein supplies material for biophysical analysis such as circular dichroism spectroscopy, dynamic light scattering, and thermal stability testing. Since the mature protein region (30-499aa) represents the full functional domain without signal peptide complications, it appears suitable for structural investigations. Scientists can examine protein folding patterns, thermal denaturation behavior, and conformational shifts under various buffer conditions. The His-tag also makes protein immobilization easier for surface plasmon resonance experiments that look at protein stability and conformational changes.

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.