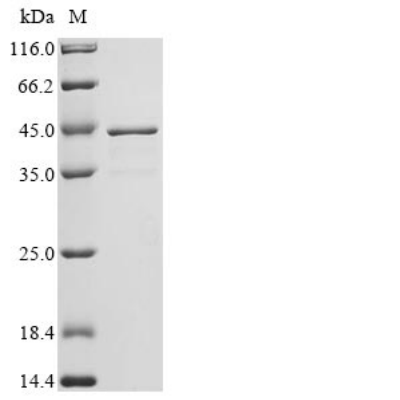
Recombinant Enterobacteria phage T4 Single-stranded DNA-binding protein (32)

Product Code	CSB-EP022706EDZ
Abbreviation	Recombinant Enterobacteria phage T4 Single-stranded DNA-binding 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.	P03695
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	Enterobacteria phage T4 (Bacteriophage T4)
Purity	Greater than 90% as determined by SDS-PAGE.
Sequence	SEQENCEMFKRKSTAELAAQMAKLNGNKGFSSEDKGEWKLKLDNAGNGQAV IRFLPSKNDEQAPFAILVNHGFKKNGKWYIETCSSTHGDYDSCPVCQYISKNDL YNTDNKEYSLVKRKTSYWANILVVKDPAAPENEGKVFKYRFGKKIWDKINAMIA VDVEMGETPVDVTCPWEGANFVLKVKQVSGFSNYDESKFLNQSAIPNIDDESF QKELFEQMVDLSEMTSKDKFKSFEELNTKFGQVMGTAVMGGAAATAAKKADK VADDLDAFNVDDFNTKTEDDFMSSSSGSSSSADDTDLDDLLNDL
Research Area	others
Source	E.coli
Target Names	32
Expression Region	1-301aa
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	41.8 kDa
Protein Length	Full Length
Image	



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

Description

Recombinant Enterobacteria phage T4 Single-stranded DNA-binding protein (32) is expressed in E.coli and spans the full length of 301 amino acids. This protein comes engineered with an N-terminal 10xHis tag and a C-terminal Myc tag, which helps with purification and detection. It reaches a purity exceeding 90% as verified by SDS-PAGE, suggesting high-quality results for research applications.

The Single-stranded DNA-binding protein (32) from Enterobacteria phage T4 appears to play a critical role in DNA replication, recombination, and repair processes. It binds to single-stranded DNA, stabilizing it and preventing degradation—something that seems essential during phage replication. Molecular biology researchers find this protein particularly interesting because of its function in maintaining DNA integrity and supporting various DNA metabolic processes.

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. Protein-Protein Interaction Studies Using Pull-Down Assays

The dual-tagged nature of this recombinant protein, with N-terminal 10xHis and C-terminal Myc tags, may make it well-suited for investigating protein-protein interactions through pull-down experiments. The His-tag allows immobilization on nickel-based resins. Meanwhile, the Myc-tag helps with detection and validation of binding partners. Researchers might use this protein as bait to identify novel interacting partners from bacterial or phage lysates. The >90% purity likely reduces background interference from contaminating proteins during interaction studies.

2. Antibody Development and Validation

This recombinant protein could serve as an immunogen for generating polyclonal or monoclonal antibodies against bacteriophage T4 single-stranded

DNA-binding protein. The high purity (>90%) and full-length nature (1-301aa) appear to provide comprehensive epitope coverage for antibody production. The dual tags allow for straightforward purification and quality control during immunization protocols. Generated antibodies might be validated using the Myc-tag for detection in Western blot or ELISA-based assays.

3. Biochemical Characterization and Stability Studies

The purified recombinant protein makes detailed biochemical analysis possible, including thermal stability, pH tolerance, and buffer compatibility studies. Researchers can investigate how the protein behaves under various conditions using techniques such as dynamic light scattering, differential scanning calorimetry, or analytical ultracentrifugation. The His-tag provides easy purification for multiple experimental conditions. High purity likely minimizes interference from contaminants during biophysical measurements.

4. Tag-Based Detection Assay Development

Having both His and Myc tags makes this protein valuable for developing and optimizing tag-based detection systems. Researchers can use this protein to validate anti-Myc antibodies, test His-tag detection reagents, or develop sandwich-type assays that take advantage of both tags simultaneously. The protein may serve as a positive control in various immunoassays and help establish detection limits and specificity parameters for tag-based experimental systems.

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.