Single Stranded DNA Binding Protein, *E. coli*

CATALOG NO: 9220-50 50 µg
9220-100 100 µg

ALTERNATE NAMES: SSB; Single-stranded DNA-binding protein

SEQUENCE: Full-length protein

SOURCE: *E. coli*

MOL. WEIGHT: 18.9 kDa

FORM: Liquid

FORMULATION: In 50 mM Tris pH 8.0 and 50% Glycerol

PURITY: ≥ 99% by SEC and SDS-PAGE analysis

STORAGE CONDITIONS: For long term storage, aliquot and store at -20 °C or -70 °C for two years. Avoid repeated freezing and thawing cycles.

DESCRIPTION: Single Stranded DNA Binding Protein (SSB) is a homo-tetrameric protein, which binds onto single stranded DNA (ssDNA) to coordinate replication, repair, and recombination. It possesses a N-terminal DNA binding core and a C-terminal protein-protein interacting tail. ssDNA can form secondary structures and SSB prevents their formations. SSB can be added to PCR and DNA sequencing reactions to enhance the DNA polymerases processivity by allowing them to access their substrate more easily.

ACTIVITY: The activity of SSB protein was determined using Gel Shift Assay. Varying amounts of SSB (150 ng to 86 µg) were able to bind onto 22 fmol of M13mp18 ssDNA in a 20 µl reaction volume and affect ssDNA mobility. Sample was loaded using 10x Orange DNA Loading Buffer (BV Cat# 2110-10) onto a 1% agarose gel. Gel was electrophoresed at 3 V/cm for 5 hr.

APPLICATIONS:

1. Enhancement of DNA polymerase activity.
2. Fluorescence polarization assays.
3. Allows longer read lengths in pyrosequencing for SNP analysis.
4. Eliminates pausing when sequencing through regions of single and double stranded DNA with strong secondary structure.
5. Improves restriction enzyme digestions.
6. Site-directed mutagenesis in conjunction with recA.

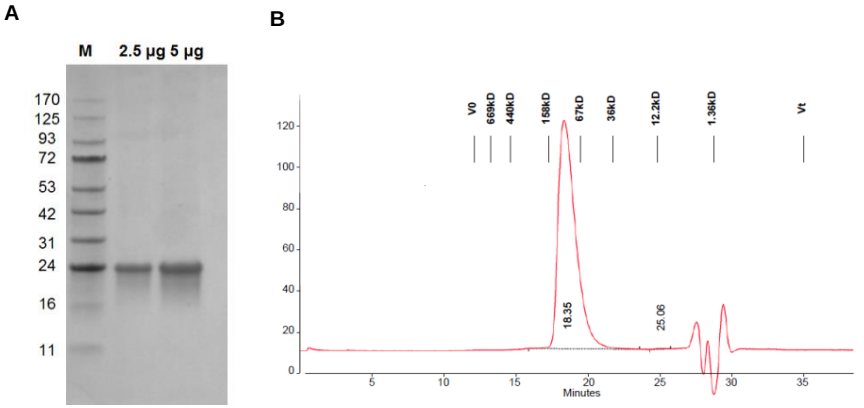

Figure A. SDS-PAGE (4-20%) of recombinant SSB: Recombinant SSB protein was loaded under reducing conditions and stained with Coomassie Blue. **Lanes M:** Marker, **Lanes 2-3:** SSB.
Figure B. Size Exclusion Chromatography (SEC) Analysis: SEC demonstrates the purity, structure and homogeneity of the SSB protein. SSB primarily exists as a 105.6 kDa complex. Purity was analyzed by Cytiva Superdex 200 Increase 3.2/300 at 0.075 ml/min in 50 mM sodium phosphate, 0.3 M NaCl pH 7.2.

RELATED PRODUCTS:

- 10x Orange DNA Loading Buffer **(2110-10)**
- Taq Polymerase **(9001)**
- Pfu Polymerase **(9003)**
- HiFidelity™ One Step RT Kit **(M1503-100)**

FOR RESEARCH USE ONLY! Not to be used on humans.