**ET SSB**

50 µg 500 µg/ml Lot: 0031312

**RECOMBINANT** Store at –20°C Exp: 12/14

Description: ET SSB (Extreme Thermostable Single-Stranded DNA Binding Protein) is a single-stranded DNA binding protein isolated from a hyperthermophilic microorganism. ET SSB is fully active after incubation at 95°C for 60 minutes. Due to the extreme thermostability, ET SSB can be used in applications that require extremely high temperature conditions, such as nucleic acid amplification and sequencing.

Source: An *E. coli* strain that carries the cloned *ssb* gene from a hyperthermophilic organism.

Applications:
- Improve the processivity of DNA polymerase (1)
- Stabilization and marking of ssDNA structure (2)
- Increase the yield and specificity of PCR reactions (3–7)
- Increase the yield and processivity of RT during RT-PCR (8–9)
- Improve DNA sequencing through regions with strong secondary structure (6)
- Enhance the RecA activity for ssDNA binding and strand transfer (10,11)

Each lot is tested for ssDNA binding activity and is visually determined to be > 95% pure on an SDS-polyacrylamide gel.

Quality Control Assays

**Exonuclease Activity:** Incubation of 20 µg ET SSB for 4 hours at 65°C in 50 µl reaction buffer containing 50 mM potassium acetate, 20 mM tris-acetate, 10 mM magnesium acetate and 1 mM dithiothreitol (pH 7.9 at 25°C), with a mixture of single and double-stranded [3H] *E. coli* DNA (200,000 cpm/µg) released < 0.1% of the total radioactivity.

**Endonuclease Activity:** Incubation of 7 µg ET SSB for 4 hours at 65°C in 50 µl reaction buffer containing 50 mM potassium acetate, 20 mM tris-acetate, 10 mM magnesium acetate and 1 mM dithiothreitol (pH 7.9 at 25°C), with 1 µg φX174 RF I DNA gave < 20% conversion to RF II.

**Nuclease Activity:** Incubation of 2.5 µg ET SSB for 16 hours at 65°C in 50 µl of reaction buffer containing 50 mM potassium acetate, 20 mM tris-acetate, 10 mM magnesium acetate and 1 mM dithiothreitol (pH 7.9 at 25°C), with 1 µg λ DNA yielded a clear and sharp band on an agarose gel.

**Notes On Use:** ET SSB is active in any polymerase buffer. Add 200 ng of ET SSB per 50 µl reaction.

References:

**References:**