PR1MA™ T4 Gene 32 Protein

Single-stranded RNA control

Contents

T4 gp32 is provided at a concentration of 10 mg/mL with 10X T4 gp32 reaction buffer.

Background

Bacteriophage T4 gene 32 protein (gp32) is a well-studied representative of the large family of single-stranded DNA (ssDNA) binding proteins (SSBs), which are essential for DNA replication, recombination, and repair. It binds transiently and cooperatively to ssDNA sequences exposed during the DNA replication process and regulates the interactions of the other sub-assemblies of the replication complex during the replication cycle. It improves the yield and transcription of reverse transcriptase and improves the yield of PCR products, as well as improving restriction enzyme digestion. It has also been used to mark areas of and stabilize single-stranded DNA for microscopic examination.

Application Notes

T4 gp32 SSB improves the efficiency of hybridization target capture applications, reverse transcriptase during RT-PCR, enhances T4 DNA polymerase activity, as well as increases the yield of PCR products. It has also recently been shown to improve restriction enzyme digestion.

**These products are intended for research use only, not for diagnostic use. The safety and efficacy of these products in diagnostic or other clinical uses has not been established.*

Protein Details

PR1MA T4 gp32 SSB is expressed in *E. coli* as the full-length protein, molecular weight 33,506 Daltons.

Shipping & Storage

- T4 gp32 SSB is stored at -20˚C in 50% glycerol, 50 mM Tris-HCl, 50 mM KCl, 1 mM DTT, 0.1 mM EDTA, 0.1% Tween-20, pH 7.5.
- *Can be supplied in a glycerol-free buffer as a custom order.*
- T4 gp32 SSB is shipped on dry or blue ice. On arrival, store at -20˚C for optimum stability. Repeated freeze/thaw cycles should be avoided.

Quality Control

- T4 gp32 SSB function: 3 ug of single-stranded M13 DNA is incubated with 30 ug of T4 gp32 for 2 hours at 37˚C and assessed for an electrophoretic mobility shift of >95% of starting material by agarose gel electrophoresis.
- Purity: >95% as determined by SDS-PAGE analysis
- T4 gp32 SSB is free of detectable RNase and DNase (exo- and endonuclease).
- <0.05 ng contaminating host DNA per ug.

T4 gp32 SSB Binding Reaction Protocol

Component	Volume
10X T4 gp32 buffer	5 µL
M13mp18 ssDNA [100 ng/µL]	10 µL
H_2O	34 µL
T4 gp32 [10 mg/mL]	1 µL
Total volume	50 µL

Incubate reactions at 37˚C for 4 hours
Heat inactivation at 65˚C for 20 minutes

Expected Results