

BSA,  
Molecular Biology  
Grade



1-800-632-7799  
info@neb.com  
www.neb.com



B9000S 001140317031

**B9000S**

**12 mg BSA, Molecular Biology Grade Exp: 3/17**  
**20 mg/ml Lot: 0011403 Store at -20°C**

**Description:** Bovine Serum Albumin (BSA) is supplied with some products to prevent adhesion of the enzyme to reaction tubes and pipette surfaces. BSA also stabilizes some proteins during incubation.

Supplied in: 20 mM Tris-HCl, 100 mM KCl, 0.1 mM EDTA and 50% glycerol (pH 8.0 @ 25°C).

**Quality Controls Assays**

**Protein Concentration ( $A_{280}$ ):** The concentration of BSA is 20 mg/ml +/- 5% as determined by UV absorption at 280 nm. Protein concentration is determined by the Pace method using the extinction coefficient of 42,925 and molecular weight of 66,464 daltons for BSA (1).

**Non-Specific DNase Activity (16 hour):** A 50  $\mu$ l reaction in NEBuffer 4 containing 1  $\mu$ g of Lambda DNA (HindIII digest) and a minimum of 100  $\mu$ g of BSA incubated for 16 hours at 37°C results in a DNA pattern free of detectable nuclease degradation as determined by agarose gel electrophoresis.

**RNase Activity (2 Hour Digestion):** A 10  $\mu$ l reaction in NEBuffer 4 containing 40 ng of fluorescein labeled RNA transcript and a minimum of 20  $\mu$ g of BSA incubated for 2 hours at 37°C results in no detectable degradation of the RNA as determined by gel electrophoresis using fluorescence detection.

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**RNase Activity (Extended Digestion):** A 10  $\mu$ l reaction in NEBuffer 4 containing 40 ng of fluorescein labeled RNA transcript and a minimum of 20  $\mu$ g of BSA is incubated at 37°C. After incubation for 16 hours, > 90% of the substrate RNA remains intact as determined by gel electrophoresis using fluorescence detection.

**Exonuclease Activity (Radioactivity Release):** A 50  $\mu$ l reaction in NEBuffer 4 containing 1  $\mu$ g of a mixture of single and double-stranded [ $^3$ H] *E. coli* DNA and a minimum of 100  $\mu$ g of BSA incubated for 4 hours at 37°C releases < 0.1% of the total radioactivity.

**Endonuclease Activity (Nicking):** A 50  $\mu$ l reaction in NEBuffer 4 containing 1  $\mu$ g of supercoiled  $\phi$ X174 RF I DNA and a minimum of 20  $\mu$ g of BSA incubated for 4 hours at 37°C results in < 20% conversion to the nicked form as determined by agarose gel electrophoresis.

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**Single Stranded DNase Activity (FAM Labeled Oligo):** A 50  $\mu$ l reaction in NEBuffer 4 containing a 20 nM solution of a fluorescent internal labeled oligonucleotide and a minimum of 100  $\mu$ g of BSA incubated for 16 hours at 37°C yields < 5% degradation as determined by capillary electrophoresis.

**Phosphatase Activity (FAM Labeled Oligo):** A 50  $\mu$ l reaction in NEBuffer 4 containing a 20 nM solution of a fluorescent internal labeled oligonucleotide with a 5' phosphate and a minimum of 100  $\mu$ g of BSA incubated for 16 hours at 37°C yields < 5% degradation as determined by capillary electrophoresis.

**qPCR DNA Contamination (*E. coli* Genomic):** A minimum of 10  $\mu$ g of BSA is screened for the presence of *E. coli* genomic DNA using SYBR Green qPCR with primers specific for the *E. coli* 16S rRNA locus. Results are quantified using a standard curve generated from purified *E. coli* genomic DNA. The measured level of *E. coli* genomic DNA contamination is less than 1 *E. coli* genome.

(see other side)

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**Reference:**

1. Pace, C.N. et al. (1995) *Protein Sci.*, 4, 2411–2423.



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