

## New England Biolabs Certificate of Analysis

**Product Name:** BSA-Molecular Biology Grade  
**Catalog Number:** B9000S  
**Concentration:** 20 mg/ml  
**Lot Number:** 10054773  
**Expiration Date:** 03/2021  
**Storage Temperature:** -20°C  
**Specification Version:** PS-B9000S v1.0  
**Composition (1X):** 20 mM Tris-HCl, 100 mM KCl, 0.1 mM EDTA, 50 % Glycerol, (pH 8.0 @ 25°C)

BSA-Molecular Biology Grade Component List			
NEB Part Number	Component Description	Lot Number	Individual QC Result
B9000SVIAL	BSA, Molecular Biology Grade	10041006	Pass

Assay Name/Specification	Lot # 10054773
<b>Endonuclease Activity (Nicking)</b> A 50 µl reaction in NEBuffer 4 containing 1 µg of supercoiled PhiX174 RF I DNA and a minimum of 20 µg of BSA, Molecular Biology Grade incubated for 4 hours at 37°C results in <20% conversion to the nicked form as determined by agarose gel electrophoresis.	Pass
<b>Exonuclease Activity (Radioactivity Release)</b> A 50 µl reaction in NEBuffer 4 containing 1 µg of a mixture of single and double-stranded [ <sup>3</sup> H] E. coli DNA and a minimum of 100 µg of BSA, Molecular Biology Grade incubated for 4 hours at 37°C releases <0.1% of the total radioactivity.	Pass
<b>Non-Specific DNase Activity (16 Hour)</b> A 50 µl reaction in NEBuffer 4 containing 1 µg of Lambda-HindIII DNA and a minimum of 100 µg of BSA, Molecular Biology Grade incubated for 16 hours at 37°C results in a DNA pattern free of detectable nuclease degradation as determined by agarose gel electrophoresis.	Pass
<b>Phosphatase activity (FAM Labeled Oligo)</b> A 50 ul reaction in NEBuffer 4 containing a 20 nM solution of a fluorescent internal labeled oligonucleotide with a 5' phosphate and a minimum of 100 µg of BSA, Molecular Biology Grade incubated for 16 hours at 37°C yields <5% degradation as determined by capillary electrophoresis.	Pass

Assay Name/Specification	Lot # 10054773
<p><b>Protein Concentration (A280)</b> The concentration of BSA, Molecular Biology Grade 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, Molecular Biology Grade (Pace, C.N. et al. (1995) Protein Sci., 4, 2411-2423).</p>	<b>Pass</b>
<p><b>qPCR DNA Contamination (E. coli Genomic)</b> A minimum of 10 µg of BSA, Molecular Biology Grade 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 ≤ 1 E. coli genome.</p>	<b>Pass</b>
<p><b>RNase Activity Assay (2 Hour Digestion)</b> A 10 µl reaction in NEBuffer 4 containing 40 ng of fluorescein labeled RNA transcript and a minimum of 20 µg of BSA, Molecular Biology Grade incubated for 2 hours at 37°C results in no detectable degradation of the RNA as determined by gel electrophoresis using fluorescent detection.</p>	<b>Pass</b>
<p><b>RNase Activity (Extended Digestion)</b> A 10 µl reaction in NEBuffer 4 containing 40 ng of fluorescein labeled RNA transcript and a minimum of 20 µg of BSA, Molecular Biology Grade is incubated at 37°C. After incubation for 16 hours, &gt;90% of the substrate RNA remains intact as determined by gel electrophoresis using fluorescent detection.</p>	<b>Pass</b>
<p><b>Single Stranded DNase Activity (FAM-Labeled Oligo)</b> A 50 µl reaction in NEBuffer 4 containing a 20 nM solution of a fluorescent internal labeled oligonucleotide and a minimum of 100 µg of BSA, Molecular Biology Grade incubated for 16 hours at 37°C yields &lt;5% degradation as determined by capillary electrophoresis.</p>	<b>Pass</b>

This product has been tested and shown to be in compliance with all specifications.



Doreen Duquette  
Production Scientist  
01 Apr 2019



Jay Minichiello  
Packaging Quality Control Inspector  
27 Sep 2019