

New England Biolabs Certificate of Analysis

Product Name: *Magnesium Chloride (MgCl₂) Solution*
Catalog #: *B9021S*
Concentration: *25 mM*
Lot #: *0021603*
Assay Date: *03/2016*
Expiration Date: *03/2021*
Storage Temp: *-20°C*
Composition (1X): *25 mM MgCl₂*
Specification Version: *PS-B9021S v1.0*
Effective Date: *24 Jan 2017*

Assay Name/Specification (minimum release criteria)	Lot #0021603
Conductivity (buffers/solutions) - The conductivity of 25 mM Magnesium Chloride (MgCl ₂) Solution is between 5.1 and 6.2 mS/cm at 25°C.	Pass
Endonuclease Activity (Nicking) - A 50 µl reaction in NEBuffer 2 containing 1 µg of supercoiled PhiX174 DNA and a minimum of 20 µl of Magnesium Chloride (MgCl ₂) Solution incubated for 4 hours at 37°C results in <10% conversion to the nicked form as determined by agarose gel electrophoresis.	Pass
Non-Specific DNase Activity (16 Hour) - A 50 µl reaction in NEBuffer 2 containing 1 µg of T3 DNA in addition to a reaction containing Lambda-HindIII DNA and a minimum of 20 µl of Magnesium Chloride (MgCl ₂) Solution incubated for 16 hours at 37°C results in a DNA pattern free of detectable nuclease degradation as determined by agarose gel electrophoresis.	Pass
PCR Amplification (5.0 kb Lambda DNA, Mg²⁺) - A 50 µl reaction in Standard <i>Taq</i> (Mg-free) Reaction Buffer containing 1.5 mM Magnesium Chloride (MgCl ₂) Solution in the presence of 200 µM dNTPs and 0.2 µM primers containing 5 ng Lambda DNA with 1.25 units of <i>Taq</i> DNA Polymerase for 25 cycles of PCR amplification results in the expected 5.0 kb product.	Pass
Phosphatase Activity (pNPP) - A 200 µl reaction in 1M Diethanolamine, pH 9.8, 0.5 mM MgCl ₂ containing 2.5 mM <i>p</i> -Nitrophenyl Phosphate (pNPP) and a minimum of 40 µl of Magnesium Chloride (MgCl ₂) Solution incubated for 4 hours at 37°C yields <0.0001 unit of alkaline phosphatase activity as determined by spectrophotometric analysis.	Pass



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<p>qPCR DNA Contamination (<i>E. coli</i> Genomic) - A minimum of 1 µl of Magnesium Chloride (MgCl₂) Solution is screened for the presence of <i>E. coli</i> genomic DNA using SYBR® Green qPCR with primers specific for the <i>E. coli</i> 16S rRNA locus. Results are quantified using a standard curve generated from purified <i>E. coli</i> genomic DNA. The measured level of <i>E. coli</i> genomic DNA contamination is ≤ 1 <i>E. coli</i> genome.</p> <p>RNase Activity (Extended Digestion) - A 10 µl reaction in NEBuffer 4 containing 40 ng of a 300 base single-stranded RNA and a minimum of 1 µl of Magnesium Chloride (MgCl₂) Solution is incubated at 37°C. After incubation for 16 hours, >90% of the substrate RNA remains intact as determined by gel electrophoresis using fluorescent detection.</p>	<p>Pass</p> <p>Pass</p>



Authorized by
Karen Moreira
24 Jan 2017



Inspected by
Lynne Apone
31 Mar 2016

