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New England Biolabs Certificate of Analysis

Product Name: Magnesium Sulfate (MgSO₄) Solution

 Catalog #:
 B1003S

 Concentration:
 100 mM

 Lot #:
 0021701

 Assay Date:
 01/2017

 Expiration Date:
 1/2022

 Storage Temp:
 -20°C

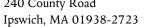
Composition (1X): 100 mM MgSO₄
Specification Version: PS-B1003S v1.0
Effective Date: 29 Nov 2017

Assay Name/Specification (minimum release criteria)	Lot #0021701
Conductivity (buffers/solutions) - The conductivity of 100 mM Magnesium Sulfate (MgSO ₄) Solution is between 8.5 and 10.5 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 5 μl of Magnesium Sulfate (MgSO ₄) 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 5 µl of Magnesium Sulfate (MgSO ₄) 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 ThermoPol II® (Mg-free) Reaction Buffer containing 2 mM Magnesium Sulfate (MgSO ₄) 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
pH (buffers/solutions) - The pH of 100 mM Magnesium Sulfate (MgSO ₄) Solution is between pH 5.3 and 5.7 at 25°C.	Pass
Phosphatase Activity (pNPP, Buffer) - A 200 μl reaction in 1M Diethanolamine @ pH 9.8 and 0.5 mM MgCl ₂ containing 2.5 mM <i>p</i> -Nitrophenyl Phosphate (pNPP) and a minimum of 20 μl Magnesium Sulfate (MgSO ₄) 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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Assay Name/Specification (minimum release criteria)	Lot #0021701
qPCR DNA Contamination (<i>E. coli</i> Genomic) - A minimum of 1 μ l of Magnesium Sulfate (MgSO ₄) 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.	Pass
RNase Activity (Extended Digestion) - A 10 μ l reaction in NEBuffer 4 containing 40 ng of a 300 base single-stranded RNA and a minimum of 1 μ l of Magnesium Sulfate (MgSO ₄) 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.	Pass

Authorized by Lynne Apone 29 Nov 2017







Inspected by Tony Spear-Alfonso

02 Mar 2018