NEW ENGLAND BioLabs Inc.
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New England Biolabs
Certificate of Analysis

Product Name:	*NEBuffer™ r3.1*
Catalog Number:	*B6003S*
Concentration:	*10 X Concentrate*
Packaging Lot Number:	*10173480*
Expiration Date:	*10/2025*
Storage Temperature:	*-20°C*
Specification Version:	*PS-B6003S v1.0*
Composition (1X):	*50 mM Tris-HCl, 100 mM NaCl, 10 mM MgCl2, 100 µg/ml rAlbumin, (pH 7.9 @ 25°C)*

NEBuffer™ r3.1 Component List			
NEB Part Number	**Component Description**	**Lot Number**	**Individual QC Result**
B6003SVIAL	NEBuffer™ r3.1	10168652	**Pass**

Assay Name/Specification	**Lot # 10173480**
Non-Specific DNase Activity (16 hour, Buffer) A 50 µl reaction in 1X NEBuffer™ r3.1 containing 1 µg of PhiX174-HaeIII DNA incubated for 16 hours at 37°C results in a DNA pattern free of detectable nuclease degradation as determined by agarose gel electrophoresis.	**Pass**
Endonuclease Activity (Nicking, Buffer) A 50 µl reaction in 1X NEBuffer™ r3.1 containing 1 µg of supercoiled PhiX174 DNA incubated for 4 hours at 37°C results in <10% conversion to the nicked form as determined by agarose gel electrophoresis.	**Pass**
pH (buffers/solutions) The pH of 10X NEBuffer™ r3.1 is between pH 7.8 and 8.0 at 25°C.	**Pass**
RNase Activity (Buffer) A 10 µl reaction in 1X NEBuffer™ r3.1 containing 40 ng of a 300 base single-stranded RNA 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**
Conductivity (buffers/solutions) The conductivity of 10X NEBuffer™ r3.1 is between 84 and 101 mS/cm at 25°C.	**Pass**
Functional Testing (Restriction Digest, Buffer)	**Pass**

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Assay Name/Specification	Lot # 10173480
A 50 µl reaction in 1X NEBuffer™ r3.1 containing 1 µg of pBC4 DNA and 1 unit of NotI incubated for 1 hour at 37ºC results in complete digestion of the substrate DNA as determined by agarose gel electrophoresis.	
Functional Testing (Restriction Digest, Buffer) A 50 µl reaction in 1X NEBuffer™ r3.1 containing 1 µg of Lambda DNA and 1 unit of AseI incubated for 1 hour at 37ºC results in complete digestion of the substrate DNA as determined by agarose gel electrophoresis.	**Pass**

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

One or more products referenced in this document may be covered by a 3rd-party trademark. Please visit www.neb.com/trademarks for additional information.

Nancy Considine
Production Scientist
18 Nov 2022

Michael Tonello
Packaging Quality Control Inspector
30 Nov 2022