NEW ENGLAND BioLabs Inc.

240 County Road
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New England Biolabs
Certificate of Analysis

Product Name:	*CutSmart® Buffer*
Catalog #:	*B7204S*
Concentration:	*10X Concentrate*
Lot #:	*2791709*
Assay Date:	*09/2017*
Expiration Date:	*09/2020*
Storage Temp:	*-20°C*
Composition (1X):	*50 mM Potassium Acetate , 20 mM Tris Acetate, 10 mM Magnesium Acetate, 100 µg/ml BSA, (pH 7.9 @ 25°C)*
Specification Version:	*PS-B7204S v1.0*
Effective Date:	*24 Jan 2019*

Assay Name/Specification (minimum release criteria)	**Lot #2791709**
Conductivity (buffers/solutions) - The conductivity of 10X CutSmart® Buffer is between 40 and 46 mS at 25°C.	**Pass**
Endonuclease Activity (Nicking, Buffer) - A 50 µl reaction in 1X CutSmart® Buffer 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**
Functional Testing (Restriction Digest, Buffer) - A 50 µl reaction in 1X CutSmart® Buffer containing 1 µg of Lambda dam- DNA and 1 unit of ClaI incubated for 1 hour at 37°C results in complete digestion of the substrate DNA as determined by agarose gel electrophoresis.	**Pass**
Functional Testing (Restriction Digest, Buffer) - A 50 µl reaction in 1X CutSmart® Buffer containing 1 µg of Lambda DNA and 1 unit of MscI incubated for 1 hour at 37°C results in complete digestion of the substrate DNA as determined by agarose gel electrophoresis.	**Pass**
Non-Specific DNase Activity (16 hour, Buffer) - A 50 µl reaction in 1X CutSmart® Buffer 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**
pH (buffers/solutions) - The pH of 10X CutSmart® Buffer is between pH 7.8 and 8.0 at 25°C.	**Pass**
RNase Activity (Buffer) - A 10 µl reaction in 1X CutSmart® Buffer 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 fluorescent detection.	**Pass**

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** The BSA in this product has been granted an EDQM "Certificate of Suitability" from the European Directorate for the Quality of Medicines (# R1-CEP-2003-204-Rev00) and has been granted a USDA Certificate for Export of Bovine Blood Plasma/Serum for Manufacture into Pharmaceutical Products.*

Authorized by
Tony Spear-Alfonso
24 Jan 2019

Inspected by
Tony Spear-Alfonso
01 Nov 2017