

## New England Biolabs Certificate of Analysis

**Product Name:** CutSmart<sup>®</sup> Buffer  
**Catalog #:** B7204S  
**Concentration:** 10X Concentrate  
**Lot #:** 3081804  
**Assay Date:** 04/2018  
**Expiration Date:** 04/2021  
**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:** 31 Jan 2018

Assay Name/Specification (minimum release criteria)	Lot #3081804
<b>Conductivity (buffers/solutions)</b> - The conductivity of 10X CutSmart <sup>®</sup> Buffer is between 40 and 46 mS at 25°C.	<b>Pass</b>
<b>Endonuclease Activity (Nicking, Buffer)</b> - A 50 µl reaction in 1X CutSmart <sup>®</sup> 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.	<b>Pass</b>
<b>Functional Testing (Restriction Digest, Buffer)</b> - A 50 µl reaction in 1X CutSmart <sup>®</sup> 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.	<b>Pass</b>
<b>Functional Testing (Restriction Digest, Buffer)</b> - A 50 µl reaction in 1X CutSmart <sup>®</sup> 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.	<b>Pass</b>
<b>Non-Specific DNase Activity (16 hour, Buffer)</b> - A 50 µl reaction in 1X CutSmart <sup>®</sup> 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.	<b>Pass</b>
<b>pH (buffers/solutions)</b> - The pH of 10X CutSmart <sup>®</sup> Buffer is between pH 7.8 and 8.0 at 25°C.	<b>Pass</b>
<b>RNase Activity (Buffer)</b> - A 10 µl reaction in 1X CutSmart <sup>®</sup> 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.	<b>Pass</b>



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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.



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Authorized by  
Derek Robinson  
31 Jan 2018



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Inspected by  
Tony Spear-Alfonso  
01 May 2018

