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## New England Biolabs Certificate of Analysis

Product Name: NruI-HF Catalog #: R3192S/L Concentration: 20,000 units/ml

Unit Definition: One unit is defined as the amount of enzyme required to digest 1 µg of Lambda DNA in 1 hour at 37°C in a total reaction

volume of 50  $\mu$ l.

*Lot* #: 0021508 Assay Date: 08/2015 Expiration Date: 08/2017 Storage Temp: -20°C

50 mM KCl, 10 mM Tris-HCl (pH pH 7.4), 1 mM DTT, 0.1 mM EDTA, 50 % Glycerol, 200 μg/ml BSA Storage Conditions:

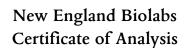
PS-R3192S/L v1.0 Specification Version: 31 Oct 2014 Effective Date:

Assay Name/Specification (minimum release criteria)	Lot #0021508
Endonuclease Activity (Nicking) - A 50 $\mu$ l reaction in CutSmart <sup>TM</sup> Buffer containing 1 $\mu$ g of supercoiled pUC19 DNA and a minimum of 100 units of NruI-HF incubated for 4 hours at 37°C results in <10% conversion to the nicked form as determined by agarose gel electrophoresis.	Pass
<b>Exonuclease Activity (Radioactivity Release)</b> - A 50 μl reaction in CutSmart <sup>TM</sup> Buffer containing 1 μg of a mixture of single and double-stranded [ <sup>3</sup> H] <i>E. coli</i> DNA and a minimum of 100 units of NruI-HF incubated for 4 hours at 37°C releases <0.1% of the total radioactivity.	Pass
Functional Test (15 minute Digest) - A 50 μl reaction in CutSmart <sup>TM</sup> Buffer containing 1 μg of Lambda DNA and 1 μl of NruI-HF incubated for 15 minutes at 37°C results in complete digestion as determined by agarose gel electrophoresis.	Pass
<b>Ligation and Recutting (Terminal Integrity)</b> - After a 20-fold over-digestion of Lambda DNA with NruI-HF, ~50% of the DNA fragments can be ligated with T4 DNA ligase in 16 hours at 16°C. Of these ligated fragments, >95% can be recut with NruI-HF.	Pass
Non-Specific DNase Activity (16 Hour) - A 50 μl reaction in CutSmart <sup>TM</sup> Buffer containing 1 μg of Lambda DNA and a minimum of 100 units of NruI-HF incubated for 16 hours at 37°C results in a DNA pattern free of detectable nuclease degradation as determined by agarose gel electrophoresis.	Pass
<b>Protein Purity Assay (SDS-PAGE)</b> - NruI-HF is ≥ 95% pure as determined by SDS-PAGE analysis using Coomassie Blue detection.	Pass









\* 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 Derek Robinson 31 Oct 2014







Inspected by Katrina Francescone 12 Aug 2015