

New England Biolabs Certificate of Analysis

Product Name: *SmaI*
Catalog #: R0141S/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 (*HindIII* digest) in 1 hour at 25°C in a total reaction volume of 50 µl.
Lot #: 0841602
Assay Date: 02/2016
Expiration Date: 2/2018
Storage Temp: -20°C
Storage Buffer: 300 mM NaCl, 10 mM Tris-HCl (pH 7.4), 1 mM DTT, 0.1 mM EDTA, 50% Glycerol, 500 µg/ml BSA
Specification Version: PS-R0141S/L v1.0
Effective Date: 17 May 2013

Assay Name/Specification (minimum release criteria)	Lot #0841602
Blue-White Screening (Terminal Integrity) - A sample of pUC19 vector linearized with a 10-fold excess of <i>SmaI</i> , religated and transformed into an <i>E. coli</i> strain expressing the LacZ beta fragment gene results in <1% white colonies.	Pass
Endonuclease Activity (Nicking) - A 50 µl reaction in CutSmart™ Buffer containing 1 µg of supercoiled PhiX174 DNA and a minimum of 20 Units of <i>SmaI</i> incubated for 4 hours at 37°C results in <20% conversion to the nicked form as determined by agarose gel electrophoresis.	Pass
Exonuclease Activity (Radioactivity Release) - A 50 µl reaction in CutSmart™ Buffer containing 1 µg of a mixture of single and double-stranded [³ H] <i>E. coli</i> DNA and a minimum of 100 units of <i>SmaI</i> incubated for 4 hours at 37°C releases <0.1% of the total radioactivity.	Pass
Ligation and Recutting (Terminal Integrity) - After a 10-fold over-digestion of Lambda DNA with <i>SmaI</i> , ~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 <i>SmaI</i> .	Pass
Non-Specific DNase Activity (16 Hour) - A 50 µl reaction in CutSmart™ Buffer containing 1 µg of Lambda- <i>HindIII</i> DNA and a minimum of 60 Units of <i>SmaI</i> incubated for 16 hours at 37°C results in a DNA pattern free of detectable nuclease degradation as determined by agarose gel electrophoresis.	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
17 May 2013



Inspected by
Jianying Luo
02 Feb 2016

