

New England Biolabs Certificate of Analysis

Product Name: *PacI*
Catalog #: *R0547S/L*
Concentration: *10,000 units/ml*
Unit Definition: *One unit is defined as the amount of enzyme required to digest 1 µg of pNEB193 DNA in 1 hour at 37°C in a total reaction volume of 50 µl.*
Lot #: *0651301*
Assay Date: *01/2013*
Expiration Date: *01/2015*
Storage Temp: *-20 °C*
Storage Conditions: *200 mM NaCl, 10 mM Tris-HCl (pH 7.4), 1 mM DTT, 0.1 mM EDTA, 50% Glycerol, 200 µg/ml BSA*
Specification Version: *PS-R0547S/L v1.0*
Effective Date: *10 Apr 2013*

Assay Name/Specification (minimum release criteria)	Lot #0651301
Blue-White Screening (Terminal Integrity) - A sample of pNEB193 vector linearized with a 10-fold excess of PacI, 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 30 Units of PacI incubated for 4 hours at 37°C results in <10% 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 PacI 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 pNEB193 DNA with PacI, ~75% 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 PacI.	Pass
Non-Specific DNase Activity (16 Hour) - A 50 µl reaction in CutSmart™ Buffer containing 1 µg of pNEB193 DNA and a minimum of 100 units of PacI incubated for 16 hours at 37°C results in a DNA pattern free of detectable nuclease degradation as determined by agarose gel electrophoresis.	Pass
Protein Purity Assay (SDS-PAGE) - PacI is >95% pure as determined by SDS PAGE analysis using Coomassie Blue 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.

M. W. Southworth

Authorized by
Maurice Southworth
10 Apr 2013

Mala Samaranayake

Inspected by
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14 Feb 2014

