

New England Biolabs Certificate of Analysis

Product Name: Smal
Catalog Number: R0141L
Concentration: 20,000 U/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.
Packaging Lot Number: 10154940
Expiration Date: 06/2024
Storage Temperature: -20°C
Storage Conditions: 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

Smal Component List			
NEB Part Number	Component Description	Lot Number	Individual QC Result
R0141LVIAL	Smal	10154942	Pass
B7024AVIAL	Gel Loading Dye, Purple (6X)	10152092	Pass
B6004SVIAL	rCutSmart™ Buffer	10153335	Pass

Assay Name/Specification	Lot # 10154940
Blue-White Screening (Terminal Integrity) A sample of pUC19 vector linearized with a 10-fold excess of Smal, religated and transformed into an E. coli 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 Smal 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] E. coli DNA and a minimum of 100 units of Smal incubated for 4 hours at 37°C releases <0.1% of the total radioactivity.	Pass
Non-Specific DNase Activity (16 Hour) A 50 µl reaction in CutSmart™ Buffer containing 1 µg of Lambda-HindIII DNA and a	Pass

Assay Name/Specification	Lot # 10154940
<p>minimum of 60 Units of SmaI incubated for 16 hours at 37°C results in a DNA pattern free of detectable nuclease degradation as determined by agarose gel electrophoresis.</p> <p>Ligation and Recutting (Terminal Integrity) After a 10-fold over-digestion of Lambda DNA with SmaI, ~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 SmaI.</p>	<p>Pass</p>

This product has been tested and shown to be in compliance with all specifications.

One or more products referenced in this document may be covered by a 3rd-party trademark. Please visit www.neb.com/trademarks for additional information.



Penghua Zhang
Production Scientist
22 Jun 2022



Erin Varney
Packaging Quality Control Inspector
22 Jun 2022