

New England Biolabs Certificate of Analysis

Product Name: *Smal*
Catalog Number: *R0141S*
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: *10062576*
Expiration Date: *11/2021*
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
R0141SVIAL	Smal	10058805	Pass
B7204SVIAL	CutSmart® Buffer	10061300	Pass
B7024SVIAL	Gel Loading Dye, Purple (6X)	10055732	Pass

Assay Name/Specification	Lot # 10062576
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
Ligation and Recutting (Terminal Integrity) After a 10-fold over-digestion of Lambda DNA with Smal, ~50% of the DNA fragments	Pass

Assay Name/Specification	Lot # 10062576
<p>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>Non-Specific DNase Activity (16 Hour) A 50 µl reaction in CutSmart™ Buffer containing 1 µg of Lambda-HindIII DNA and a 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>Pass</p>

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



Jianying Luo
Production Scientist
06 Nov 2019



Jay Minichiello
Packaging Quality Control Inspector
14 Jan 2020