![New England BioLabs Inc. logo] | be INSPIRED drive DISCOVERY stay GENUINE | 240 County Road Ipswich, MA 01938-2723 | Tel 978-927-5054 Fax 978-921-1350 | www.neb.com info@neb.com

New England Biolabs
Certificate of Analysis

Product Name:	*SmaI*
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.*
Lot Number:	*10013089*
Expiration Date:	*06/2020*
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*

SmaI Component List

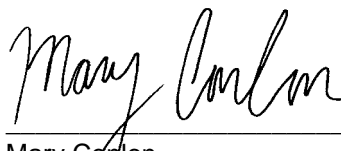| NEB Part Number	Component Description	Lot Number	Individual QC Result
R0141SVIAL	SmaI	10013019	**Pass**
B7204SVIAL	CutSmart® Buffer	10010632	**Pass**
B7024SVIAL	Gel Loading Dye, Purple (6X)	10007497	**Pass**

Assay Name/Specification	Lot # 10013089
Exonuclease Activity (Radioactivity Release) A 50 μl reaction in CutSmart™ Buffer containing 1 μg of a mixture of single and double-stranded [³H] E. coli DNA and a minimum of 100 units of SmaI incubated for 4 hours at 37⁰C releases <0.1% of the total radioactivity.	**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 SmaI incubated for 4 hours at 37⁰C results in <20% conversion to the nicked form as determined by agarose gel electrophoresis.	**Pass**
Blue-White Screening (Terminal Integrity) A sample of pUC19 vector linearized with a 10-fold excess of SmaI, religated and transformed into an E. coli strain expressing the LacZ beta fragment gene results in <1% white colonies.	**Pass**
Non-Specific DNase Activity (16 Hour) A 50 μl reaction in CutSmart™ Buffer containing 1 μg of Lambda-HindIII DNA and a	**Pass**

![ISO 9001 Registered Quality Management nqa.] ![ISO 13485 Registered Medical Devices nqa.] ![ISO 14001 Registered Environmental Management nqa.]

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Assay Name/Specification	Lot # 10013089
minimum of 60 Units of SmaI incubated for 16 hours at 37ºC results in a DNA pattern free of detectable nuclease degradation as determined by agarose gel electrophoresis.	
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 16ºC. Of these ligated fragments, >95% can be recut with SmaI.	Pass

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

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Tony Spear-Alfonso
Production Scientist
14 May 2018

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Mary Conlon
Packaging Quality Control Inspector
28 Jun 2018

ISO 9001
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