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New England Biolabs Certificate of Analysis

Product Name: SacI-HF®
Catalog Number: R3156S
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 37°C in a total reaction

volume of 50 μl.

Lot Number: 10033499
Expiration Date: 10/2020
Storage Temperature: -20°C

Storage Conditions: 100 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-R3156S/L v2.0

SacI-HF® Component List				
NEB Part Number	Component Description	Lot Number	Individual QC Result	
R3156SVIAL	SacI-HF®	10026500	Pass	
B7204SVIAL	CutSmart® Buffer	10031564	Pass	
B7024SVIAL	Gel Loading Dye, Purple (6X)	10021137	Pass	

Assay Name/Specification	Lot # 10033499
Blue-White Screening (Terminal Integrity) A sample of LITMUS28i vector linearized with a 10-fold excess of SacI-HF™, 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 60 Units of Sacl-HF™ 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 [³H] E. coli DNA and a minimum of 100 units of SacI-HF™ incubated for 4 hours at 37°C releases <0.1% of the total radioactivity.	Pass
Ligation and Recutting (Terminal Integrity) After a 20-fold over-digestion of pXba DNA with SacI-HF™, >95% of the DNA fragments	Pass



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Assay Name/Specification	Lot # 10033499
can be ligated with T4 DNA ligase in 16 hours at 16°C. Of these ligated fragments, >95% can be recut with SacI-HF™.	
Non-Specific DNase Activity (16 Hour) A 50 µl reaction in CutSmart™ Buffer containing 1 µg of Lambda-HindIII DNA and a minimum of 100 Units of Sacl-HF™ 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) SacI-HF™ is >95% pure as determined by SDS PAGE analysis using Coomassie Blue detection.	Pass

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

Anthony Francis
Production Scientist

31 Oct 2018

Michael Tonello

Packaging Quality Control Inspector

14 Jan 2019



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