NEW ENGLAND BioLabs Inc.
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240 County Road
Ipswich, MA 01938-2723
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New England Biolabs
Certificate of Analysis

Product Name:	*Esp3I*
Catalog Number:	*R0734S*
Concentration:	*10,000 U/ml*
Unit Definition:	*One unit is defined as the amount of enzyme required to digest 1 µg of Lambda DNA in 1 hour at 37°C in a total reaction volume of 50 µl.*
Lot Number:	*10030625*
Expiration Date:	*11/2020*
Storage Temperature:	*-20°C*
Storage Conditions:	*300 mM NaCl , 10 mM Tris-HCl , 1 mM DTT , 0.1 mM EDTA , 50 % Glycerol , 500 µg/ml BSA, (pH 7.4 @ 25°C)*
Specification Version:	*PS-R0734S/L v1.0*

Esp3I Component List			
NEB Part Number	**Component Description**	**Lot Number**	**Individual QC Result**
R0734SVIAL	Esp3I	10030624	**Pass**
B7204SVIAL	CutSmart® Buffer	10021123	**Pass**
B7024SVIAL	Gel Loading Dye, Purple (6X)	10021131	**Pass**

Assay Name/Specification	**Lot # 10030625**
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 Esp3I incubated for 4 hours at 37°C releases <0.1% of the total radioactivity.	**Pass**
Functional Testing (15 minute Digest) A 50 µl reaction in CutSmart® Buffer containing 1 µg of Lambda DNA and 1 µl of Esp3I incubated for 15 minutes at 37ºC results in complete digestion as determined by agarose gel electrophoresis.	**Pass**
Ligation and Recutting (Terminal Integrity) After a 10-fold over-digestion of Lambda DNA with Esp3I, ≥95% of the DNA fragments can be ligated with T4 DNA ligase in 16 hours at 16ºC. Of these ligated fragments, ~75% can be recut with Esp3I.	**Pass**
Non-Specific DNase Activity (16 Hour) A 50 µl reaction in CutSmart® Buffer containing 1 µg of Lambda DNA and a minimum of 100 units of Esp3I incubated for 16 hours at 37ºC results in a DNA pattern free of	**Pass**

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Assay Name/Specification	Lot # 10030625
detectable nuclease degradation as determined by agarose gel electrophoresis.	
Protein Purity Assay (SDS-PAGE) Esp3I is ≥ 95% pure as determined by SDS-PAGE analysis using Coomassie Blue detection.	**Pass**
RNase Activity (Extended Digestion) A 10 µl reaction in NEBuffer 4 containing 40 ng of a 300 base single-stranded RNA and a minimum of 10 units of Esp3I is incubated at 37°C. After incubation for 16 hours, >90% of the substrate RNA remains intact as determined by gel electrophoresis using fluorescent detection.	**Pass**

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

Tony Spear-Alfonso
Production Scientist
08 Nov 2018

Michael Tonello
Packaging Quality Control Inspector
07 Dec 2018