

New England Biolabs Certificate of Analysis

Product Name: *Esp3I*
Catalog Number: *R0734L*
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.*
Packaging Lot Number: *10232767*
Expiration Date: *11/2025*
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
R0734LVIAL	Esp3I	10209986	Pass
B7024AVIAL	Gel Loading Dye, Purple (6X)	10234873	Pass
B6004SVIAL	rCutSmart™ Buffer	10233336	Pass

Assay Name/Specification	Lot # 10232767
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 37°C 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 16°C. 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 37°C results in a DNA pattern free of	Pass


Assay Name/Specification	Lot # 10232767
detectable nuclease degradation as determined by agarose gel electrophoresis.	
Protein Purity Assay (SDS-PAGE) Esp3I is $\geq 95\%$ pure as determined by SDS-PAGE analysis using Coomassie Blue detection.	Pass
RNase Activity (Extended Digestion) A 10 μ l 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.

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YunJie Sun
Production Scientist
20 Nov 2023



Michael Tonello
Packaging Quality Control Inspector
01 Apr 2024