

## New England Biolabs Certificate of Analysis

*Product Name:* EcoO109I  
*Catalog #:* R0503S/L  
*Concentration:* 20,000 units/ml  
*Unit Definition:* One unit is defined as the amount of enzyme required to digest 1 µg of Lambda DNA (Hind III digest) in 1 hour at 37°C in a total reaction volume of 50 µl.  
*Lot #:* 0111305  
*Assay Date:* 05/2013  
*Expiration Date:* 05/2015  
*Storage Temp:* -20 °C  
*Storage Conditions:* 50 mM NaCl, 20 mM Tris-HCl (pH 8.2), 10 mM B-Me, 0.1 mM EDTA, 50% Glycerol, 200 µg/ml BSA  
*Specification Version:* PS-R0503S/L v1.0  
*Effective Date:* 17 Apr 2013

Assay Name/Specification (minimum release criteria)	Lot #0111305
<b>Blue-White Screening (Terminal Integrity)</b> - A sample of pUC19 vector linearized with a 10-fold excess of EcoO109I, religated and transformed into an <i>E. coli</i> strain expressing the LacZ beta fragment gene results in <1% white colonies.	<b>Pass</b>
<b>Endonuclease Activity (Nicking)</b> - A 50 µl reaction in CutSmart™ Buffer containing 1 µg of supercoiled PhiX174 DNA and a minimum of 60 Units of EcoO109I incubated for 4 hours at 37°C results in <10% conversion to the nicked form as determined by agarose gel electrophoresis.	<b>Pass</b>
<b>Exonuclease Activity (Radioactivity Release)</b> - A 50 µl reaction in CutSmart™ Buffer containing 1 µg of a mixture of single and double-stranded [ <sup>3</sup> H] <i>E. coli</i> DNA and a minimum of 100 units of EcoO109I incubated for 4 hours at 37°C releases <0.1% of the total radioactivity.	<b>Pass</b>
<b>Ligation and Recutting (Terminal Integrity)</b> - After a 20-fold over-digestion of pBR322 DNA with EcoO109I, >95% of the DNA fragments can be ligated with T4 DNA ligase in 16 hours at 16°C. Of these ligated fragments, >95% can be recut with EcoO109I.	<b>Pass</b>
<b>Non-Specific DNase Activity (16 Hour)</b> - A 50 µl reaction in CutSmart™ Buffer containing 1 µg of Lambda-HindIII DNA and a minimum of 100 Units of EcoO109I incubated for 16 hours at 37°C results in a DNA pattern free of detectable nuclease degradation as determined by agarose gel electrophoresis.	<b>Pass</b>

\* The BSA in this product has been granted an EDQM "Certificate of Suitability" from the European Directorate for the Quality of Medicines (# R1-CEP-2003-204-Rev00) and has been granted a USDA Certificate for Export of Bovine Blood Plasma/Serum for Manufacture into Pharmaceutical Products.

M. W. Southworth

Diana O'Loane

Authorized by  
Maurice Southworth  
17 Apr 2013

Inspected by  
Diana O'Loane  
22 Oct 2013

