## New England Biolabs

### Product Specification

**Product Name:**  
Ascl

**Catalog #:**  
R0558S/L

**Concentration:**  
10,000 units/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.

**Shelf Life:**  
24 months

**Storage Temp:**  
-20 °C

**Storage Conditions:**  
50 mM KCl, 10 mM Tris-HCl (pH 7.4), 1 mM DTT, 0.1 mM EDTA, 50% Glycerol, 200 µg/ml BSA

**Specification Version:**  
PS-R0558S/L v1.0

**Effective Date:**  
24 May 2013

### Assay Name/Specification (minimum release criteria)

<table>
<thead>
<tr>
<th>Assay Name/Specification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Blue-White Screening (Terminal Integrity)</strong> -</td>
<td>A sample of pNEB193 vector linearized with a 10-fold excess of Ascl, religated and transformed into an <em>E. coli</em> strain expressing the LacZ beta fragment gene results in &lt;1% white colonies.</td>
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<tr>
<td><strong>Endonuclease Activity (Nicking)</strong> -</td>
<td>A 50 µl reaction in CutSmart™ Buffer containing 1 µg of supercoiled PhiX174 DNA and a minimum of 30 Units of Ascl incubated for 4 hours at 37°C results in &lt;10% conversion to the nicked form as determined by agarose gel electrophoresis.</td>
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<tr>
<td><strong>Exonuclease Activity (Radioactivity Release)</strong> -</td>
<td>A 50 µl reaction in CutSmart™ Buffer containing 1 µg of a mixture of single and double-stranded [<em>^3^H</em>] <em>E. coli</em> DNA and a minimum of 100 units of Ascl incubated for 4 hours at 37°C releases &lt;0.1% of the total radioactivity.</td>
</tr>
<tr>
<td><strong>Ligation and Recutting (Terminal Integrity)</strong> -</td>
<td>After a 10-fold over-digestion of Lambda DNA with Ascl, &gt;95% of the DNA fragments can be ligated with T4 DNA ligase in 16 hours at 16°C. Of these ligated fragments, &gt;95% can be recut with Ascl.</td>
</tr>
<tr>
<td><strong>Non-Specific DNase Activity (16 Hour)</strong> -</td>
<td>A 50 µl reaction in CutSmart™ Buffer containing 1 µg of Lambda DNA and a minimum of 30 Units of Ascl incubated for 16 hours at 37°C results in a DNA pattern free of detectable nuclease degradation as determined by agarose gel electrophoresis.</td>
</tr>
</tbody>
</table>

* 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.

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**Derek Robinson**  
Director of Quality Control  

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**Date**  
24 May 2013

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