

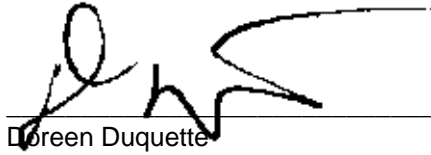
## New England Biolabs Certificate of Analysis

**Product Name:** Haell  
**Catalog Number:** R0107S  
**Concentration:** 20,000 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:** 10039631  
**Expiration Date:** 03/2021  
**Storage Temperature:** -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-R0107S/L v1.0

| Haell Component List |                       |            |                      |
|----------------------|-----------------------|------------|----------------------|
| NEB Part Number      | Component Description | Lot Number | Individual QC Result |
| R0107SVIAL           | Haell                 | 10039632   | Pass                 |
| B7204SVIAL           | CutSmart® Buffer      | 10036664   | Pass                 |

| Assay Name/Specification   | Lot # 10039631 |
|--|----------------|
| <p><b>Exonuclease Activity (Radioactivity Release)</b><br/>           A 50 µl reaction in CutSmart™ Buffer containing 1 µg of a mixture of single and double-stranded [<sup>3</sup>H] E. coli DNA and a minimum of 100 units of Haell incubated for 4 hours at 37°C releases &lt;0.1% of the total radioactivity.</p>  | Pass           |
| <p><b>Ligation and Recutting (Terminal Integrity)</b><br/>           After a 10-fold over-digestion of Lambda DNA with Haell, &gt;95% of the DNA fragments can be ligated with T4 DNA ligase in 4 hours at 25°C. Of these ligated fragments, &gt;95% can be recut with Haell.</p>  | Pass           |
| <p><b>Non-Specific DNase Activity (16 hour)</b><br/>           A 50 µl reaction in CutSmart™ Buffer containing 1 µg of Lambda DNA and a minimum of 20 units of Haell incubated for 16 hours at 37°C results in a DNA pattern free of detectable nuclease degradation as determined by agarose gel electrophoresis. NOTE: although no nuclease degradation is detected under these conditions, extended incubations and/or high concentrations of this enzyme may result in star activity. See the product FAQ for recommended reaction conditions for this enzyme.</p> | Pass           |

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



Doreen Duquette  
Production Scientist  
05 Mar 2019



Josh Hersey  
Packaging Quality Control Inspector  
21 Mar 2019