

## New England Biolabs Certificate of Analysis

**Product Name:** *KasI*  
**Catalog Number:** *R0544L*  
**Concentration:** *5,000 U/ml*  
**Unit Definition:** *One unit is defined as the amount of enzyme required to digest 1 µg of pBR322 DNA in 1 hour at 37°C in a total reaction volume of 50 µl.*  
**Packaging Lot Number:** *10076447*  
**Expiration Date:** *06/2021*  
**Storage Temperature:** *-20°C*  
**Storage Conditions:** *500 mM KCl, 20 mM Tris-HCl (pH 7.0), 0.1 mM EDTA, 1mM MgCl<sub>2</sub>, 50% Glycerol, 0.10% Triton X-100, 200 µg/ml BSA*  
**Specification Version:** *PS-R0544S/L v2.0*

| KasI Component List |                       |            |                      |
|---------------------|-----------------------|------------|----------------------|
| NEB Part Number     | Component Description | Lot Number | Individual QC Result |
| R0544LVIAL          | KasI                  | 10076448   | Pass                 |
| B7204SVIAL          | CutSmart® Buffer      | 10075571   | Pass                 |

| Assay Name/Specification   | Lot # 10076447 |
|--|----------------|
| <p><b>Blue-White Screening (Terminal Integrity)</b><br/>           A sample of LITMUS38i vector linearized with a 10-fold excess of KasI, religated and transformed into an E. coli strain expressing the LacZ beta fragment gene results in &lt;1% white colonies.</p>  | Pass           |
| <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 5 units of KasI 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 20-fold over-digestion of pBR322 DNA with KasI, &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 KasI.</p>                                     | Pass           |
| <p><b>Non-Specific DNase Activity (16 Hour)</b><br/>           A 50 µl reaction in CutSmart™ Buffer containing 1 µg of pBR322 DNA and a minimum of 5 Units of KasI incubated for 16 hours at 37°C results in a DNA pattern free of detectable nuclease degradation as determined by agarose gel electrophoresis.</p> | Pass           |

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|--|----------------|
| <b>Protein Purity Assay (SDS-PAGE)</b><br>KasI is >95% pure as determined by SDS PAGE analysis using Coomassie Blue detection. | <b>Pass</b>    |

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

  
Penghua Zhang  
Production Scientist  
22 Jul 2020

  
Michael Tonello  
Packaging Quality Control Inspector  
22 Jul 2020