

## New England Biolabs Certificate of Analysis

**Product Name:** *Stul*  
**Catalog Number:** *R0187M*  
**Concentration:** *100,000 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:** *10007455*  
**Expiration Date:** *05/2020*  
**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-R0187M v1.0*

Stul Component List			
NEB Part Number	Component Description	Lot Number	Individual QC Result
R0187MVIAl	Stul	0191805	Pass
B7204SVIAl	CutSmart® Buffer	3051803	Pass
B7024SVIAl	Gel Loading Dye, Purple (6X)	0231804	Pass

Assay Name/Specification	Lot # 10007455
<b>Blue-White Screening (Terminal Integrity)</b> A sample of Litmus 28i vector linearized with a 10-fold excess of Stul, religated and transformed into an E. coli strain expressing the LacZ beta fragment gene results in <1% white colonies.	Pass
<b>Endonuclease Activity (Nicking)</b> A 50 µl reaction in CutSmart™ Buffer containing 1 µg of supercoiled pBR322 DNA and a minimum of 10 Units of Stul incubated for 4 hours at 37°C results in <20% conversion to the nicked form as determined by agarose gel electrophoresis.	Pass
<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] E. coli DNA and a minimum of 300 units of Stul incubated for 4 hours at 37°C releases <0.1% of the total radioactivity.	Pass
<b>Ligation and Recutting (Terminal Integrity)</b> After a 10-fold over-digestion of Lambda DNA with Stul, >95% of the DNA fragments can be ligated with T4 DNA ligase in 16 hours at 16°C. Of these ligated fragments,	Pass

Assay Name/Specification	Lot # 10007455
>95% can be recut with Stul.	
<p><b>Non-Specific DNase Activity (16 Hour)</b> A 50 µl reaction in CutSmart™ Buffer containing 1 µg of Lambda DNA and a minimum of 100 Units of Stul incubated for 16 hours at 37°C results in a DNA pattern free of detectable nuclease degradation as determined by agarose gel electrophoresis.</p>	<b>Pass</b>
<p><b>Protein Purity Assay (SDS-PAGE)</b> Stul is &gt;95% pure as determined by SDS PAGE analysis using Coomassie Blue detection.</p>	<b>Pass</b>

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



Penghua Zhang  
Production Scientist  
10 May 2018



Michael Tonello  
Packaging Quality Control Inspector  
10 May 2018