

## New England Biolabs Certificate of Analysis

**Product Name:** *Ph.D.<sup>™</sup> Peptide Display Cloning System*  
**Catalog Number:** *E8101S*  
**Packaging Lot Number:** *10203701*  
**Expiration Date:** *05/2025*  
**Storage Temperature:** *-20°C*  
**Specification Version:** *PS-E8101S v1.0*

### Ph.D.<sup>™</sup> Peptide Display Cloning System Component List

NEB Part Number	Component Description	Lot Number	Individual QC Result
S1203AVIAL	M13 Extension Primer	10191232	<b>Pass</b>
N3541SVIAL	M13KE gIII Cloning Vector	10191231	<b>Pass</b>

Assay Name/Specification	Lot # 10203701
<b>A260/A280 Assay</b> The ratio of UV absorption of M13KE gIII Cloning Vector at 260 and 280 nm is between 1.8 and 2.0.	<b>Pass</b>
<b>DNA Concentration (A260)</b> The concentration of M13KE gIII Cloning Vector is between 1000 and 1050 µg/ml as determined by UV absorption at 260 nm.	<b>Pass</b>
<b>Electrophoretic Pattern (Plasmid)</b> The banding pattern of M13KE gIII Cloning Vector on a 1.2% agarose gel is evaluated against a control lot for sharpness and relative intensity as determined by gel electrophoresis using Ethidium Bromide.	<b>Pass</b>
<b>Functional Testing (PCR)</b> The performance of the Ph.D. <sup>™</sup> Peptide Display Cloning System is tested in a 25 µl PCR reaction using 1 ng M13KE gIII Cloning Vector as the substrate, 0.0125 nmol M13KE Extension Primer and 0.0125 nmol reverse primer (5-CCC ATG TAC CGT AAC ACT GAGTTTC-3) for 25 cycles of PCR resulting in the expected 194 bp product as determined by agarose gel electrophoresis.	<b>Pass</b>
<b>Non-Specific DNase Activity (DNA, 16 hour)</b> A 50 µl reaction in 1X NEBuffer 2 containing 2.5 µg of M13KE gIII Cloning Vector 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>

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

One or more products referenced in this document may be covered by a 3rd-party trademark. Please visit [www.neb.com/trademarks](http://www.neb.com/trademarks) for additional information.

*Beth M. Paschal*

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Beth Paschal  
Production Scientist  
26 May 2023

*Michael Tonello*

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Michael Tonello  
Packaging Quality Control Inspector  
22 Sep 2023