

## New England Biolabs Certificate of Analysis

Product Name: *Ph.D.™-7 Phage Display Peptide Library Kit*  
 Catalog Number: *E8100S*  
 Lot Number: *10035035*  
 Expiration Date: *10/2020*  
 Storage Temperature: *-20°C*  
 Specification Version: *PS-E8100S v1.0*

Ph.D.™-7 Phage Display Peptide Library Kit Component List			
NEB Part Number	Component Description	Lot Number	Individual QC Result
S1259AVIAL	-96 gIII Sequencing Primer (20-mer)	10013516	Pass
S1258AVIAL	-28 gIII Sequencing Primer (22-mer)	10013515	Pass
N7024AVIAL	Biotin	10018921	Pass
N7023AVIAL	Streptavidin, lyophilized	10031464	Pass
E8102AVIAL	Ph.D.™-7 Phage Display Peptide Library	10015392	Pass
E4104SVIAL	E.coli K12 ER2738	10034478	Pass

Assay Name/Specification	Lot # 10035035
<p><b>Absolute Phage Titer</b>            Infection of a mid-log culture of E. coli ER2738 with Ph.D.™-7 Phage Display Peptide Library followed by plating, yields <math>\geq 1 \times 10^{13}</math> pfu/ml.</p>	Pass
<p><b>Functional Testing (Panning)</b>            A 100-fold representation of the Ph.D.™-7 Phage Display Peptide Library containing approximately <math>10^{11}</math> pfu is diluted in 200 <math>\mu</math>l TBS and panned against 300 ng <math>\beta</math>-endorphin monoclonal antibody. The bound phage is affinity captured using magnetic beads and eluted with 1 ml of 0.2M Glycine-HCl, pH 2.2. After three rounds of selection, <math>\geq 75\%</math> of sequences contain a motif related to the known epitope for the antibody.</p>	Pass
<p><b>Phage Contamination (Environmental)</b>            A 1:100 dilution of an overnight culture of E. coli ER2738 was made in 20 ml LB, to which <math>10^5</math> pfu of Ph.D.™-7 Phage Display Peptide Library was added. The flask was incubated at 37°C on a rotating shaker for 5 hours. A 1 ml volume of culture was removed and centrifuged. Five microliters (5 <math>\mu</math>l) of phage-containing supernatant was used for three successive rounds of amplification. The final culture supernatant was plated on three LB/IPTG/Xgal plates and then titered. Fewer than 5% clear or white plaques were observed in a minimum of 100 total plaques counted on each plate.</p>	Pass

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<b>Sequence Verification (DNA)</b> The Ph.D. <sup>™</sup> -7 Phage Display Peptide Library was sequenced using 5'-CCCATGTACCGTAACACTGAGTTTC-3' as a primer to confirm the correct form of the cloned insert on the displayed peptide, X7-GGG.	<b>Pass</b>

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

*Beth M. Paschal*

Beth Paschal  
Production Scientist  
12 Oct 2018

*Michael Tonello*

Michael Tonello  
Packaging Quality Control Inspector  
11 Mar 2019