

## New England Biolabs Certificate of Analysis

Product Name: *Ph.D.™-12 Phage Display Peptide Library Kit*  
 Catalog Number: *E8110S*  
 Packaging Lot Number: *10107401*  
 Expiration Date: *02/2023*  
 Storage Temperature: *-20°C*  
 Specification Version: *PS-E8110S v2.0*

| Ph.D.™-12 Phage Display Peptide Library Kit Component List |   |            |                      |
|--|---|------------|----------------------|
| NEB Part Number  | Component Description                   | Lot Number | Individual QC Result |
| S1259AVIAL   | -96 gIII Sequencing Primer (20-mer)     | 10066252   | Pass                 |
| S1258AVIAL   | -28 gIII Sequencing Primer (22-mer)     | 10066251   | Pass                 |
| N7024AVIAL   | Biotin                                  | 10066253   | Pass                 |
| N7023AVIAL   | Streptavidin, lyophilized               | 10081107   | Pass                 |
| E8111AVIAL   | Ph.D.™-12 Phage Display Peptide Library | 10106721   | Pass                 |
| E4104SVIAL   | E.coli K12 ER2738                       | 10055843   | Pass                 |

| Assay Name/Specification  | Lot # 10107401 |
|---|----------------|
| <b>Absolute Phage Titer</b><br>Infection of a mid-log culture of E. coli ER2738 with Ph.D.™-12 Phage Display Peptide Library followed by plating, yields $\geq 1 \times 10^{13}$ pfu/ml.  | Pass           |
| <b>Functional Testing (Panning)</b><br>A 100-fold representation of the Ph.D.™-12 Phage Display Peptide Library containing approximately $10^{11}$ pfu is diluted in 200 $\mu$ l TBS and panned against 300 ng $\beta$ -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, $\geq 75\%$ of sequences contain a motif related to the known epitope for the antibody. | Pass           |
| <b>Sequence Verification (DNA)</b><br>The Ph.D.™-12 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, X12-GGG.   | Pass           |
| <b>Phage Contamination (Environmental)</b><br>A 1:100 dilution of an overnight culture of E. coli ER2738 was made in 20 ml LB, to which $10^3$ pfu of Ph.D.™-12 Phage Display Peptide Library was added. The flask was  | Pass           |


| Assay Name/Specification  | Lot # 10107401 |
|---|----------------|
| incubated at 37°C on a rotating shaker for 5 hours. A 1 ml volume of culture was removed and centrifuged. A volume of culture supernatant equivalent to the initial PFU input was added to a second, 20 ml culture like the first. The final culture supernatant was plated on three LB/IPTG/Xgal plates and then titered. Fewer than 20% clear or white plaques were observed in a minimum of 100 total plaques counted on each plate. |                |

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.



Alicia Bielik  
Production Scientist  
25 May 2021



Michael Tonello  
Packaging Quality Control Inspector  
25 May 2021