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New England Biolabs
Product Specification

Product Name:	*Ph.D.™-C7C Phage Display Peptide Library Kit v2*
Catalog #:	*E8212S*
Kit Components:	*Ph.D.™-C7C Phage Display Peptide Library (E8121) — Store at -20°C* *-96 gIII Sequencing Primer (20-mer) (S1259) — Store at -20°C* *E. coli K12 ER2738 (E4104) — Store at -80°C* *DYKDDDDK Mouse mAb (E8004) — Store at -20°C* *Protein G Magnetic Beads (S1430) — Store at 4°C*
Shelf Life:	*24 months*
Storage Temp:	*Multi-temperature*
Specification Version:	*PS-E8212S v2.0*
Effective Date:	*19 May 2022*

Assay Name/Specification (minimum release criteria)
Absolute Phage Titer - Infection of a mid-log culture of *E. coli* ER2738 with Ph.D.™-C7C Phage Display Peptide Library followed by plating, yields ≥ 1 x 10^{13} pfu/ml.
Functional Testing (Panning) - A 100-fold representation of the Ph.D.™-C7C Phage Display Peptide Library containing approximately 10^{11} pfu is diluted in 200 µl TBS and panned against 300 ng of anti-FLAG® 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, ≥75% of sequences contain a motif related to the known epitope for the antibody.
Phage Contamination (Environmental) - 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.™-C7C 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. 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 plaques were observed in a minimum of 100 total plaques counted on each plate.
Sequence Verification (DNA) - The Ph.D.™-C7C 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, ACX_7C-GGG.

Date 19 May 2022

Derek Robinson
Director, Quality Control