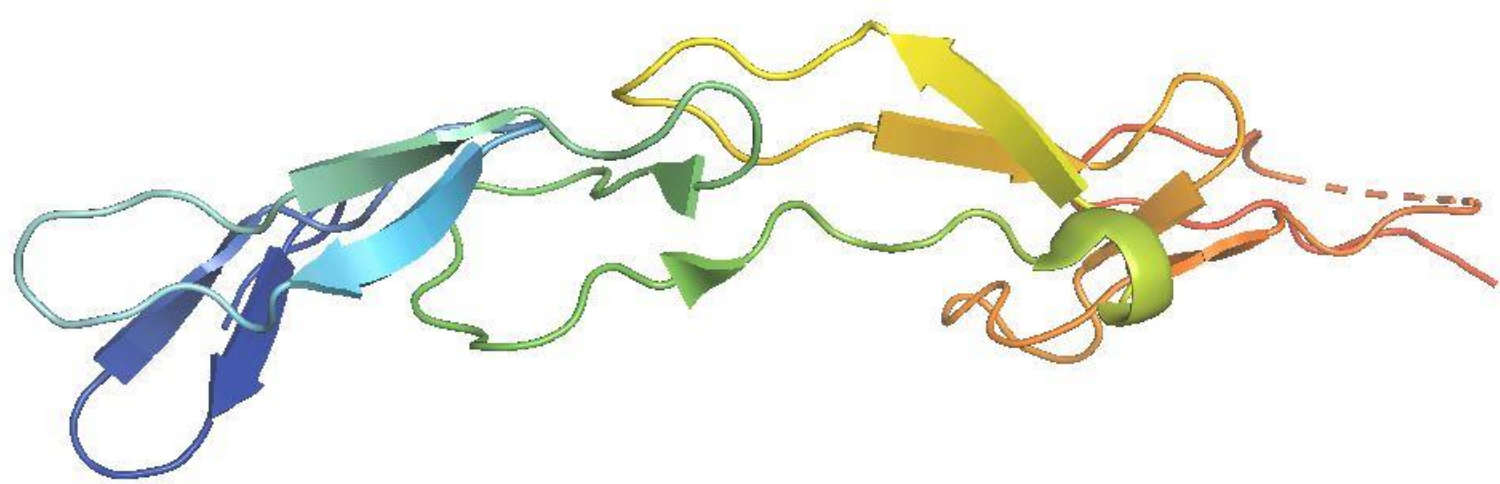


# Biopanning of phage display against Human CD40

**Michael Deines, Elizabeth Choe, Armin Ahmadi, and Dr. Kyung-Ho Roh**  
Department of Chemical and Materials Engineering

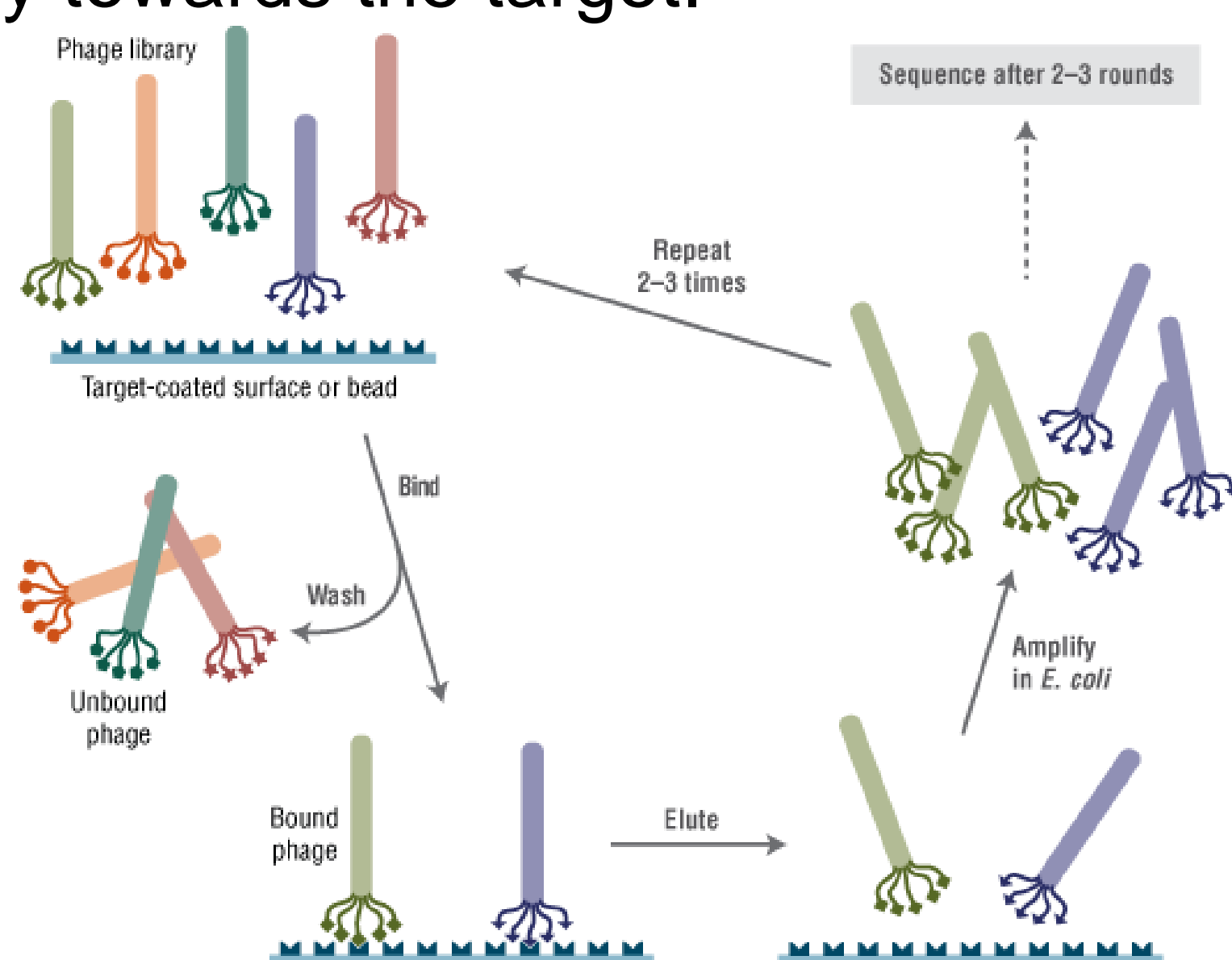
## CD40

CD40 is a type I transmembrane protein found in antigen-presenting cells. A critical B cell activation signaling pathway is induced by molecular interaction between CD40 on a B cell and CD154 on a CD4+ T cell.



## Biopanning and Phage Display

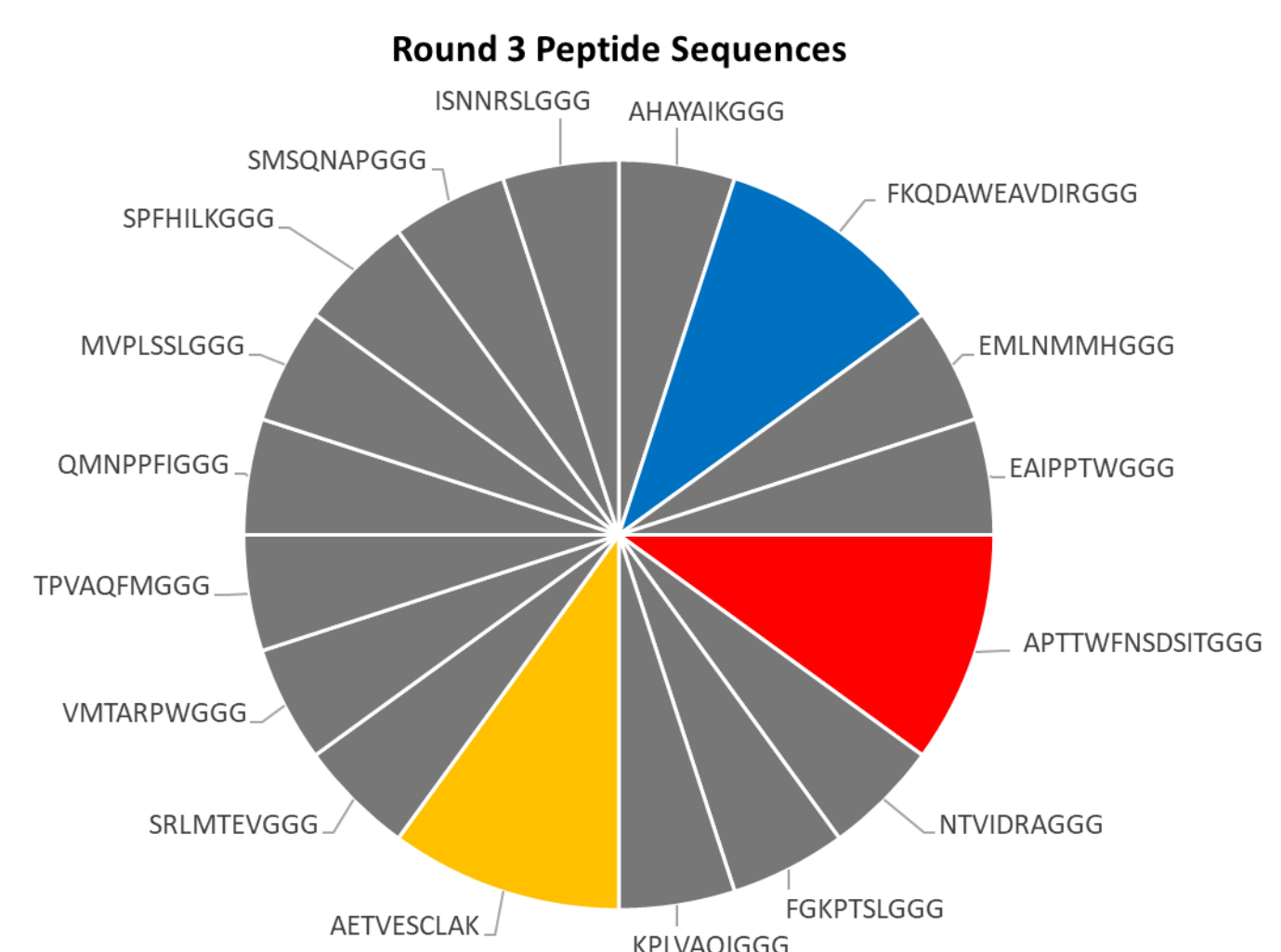
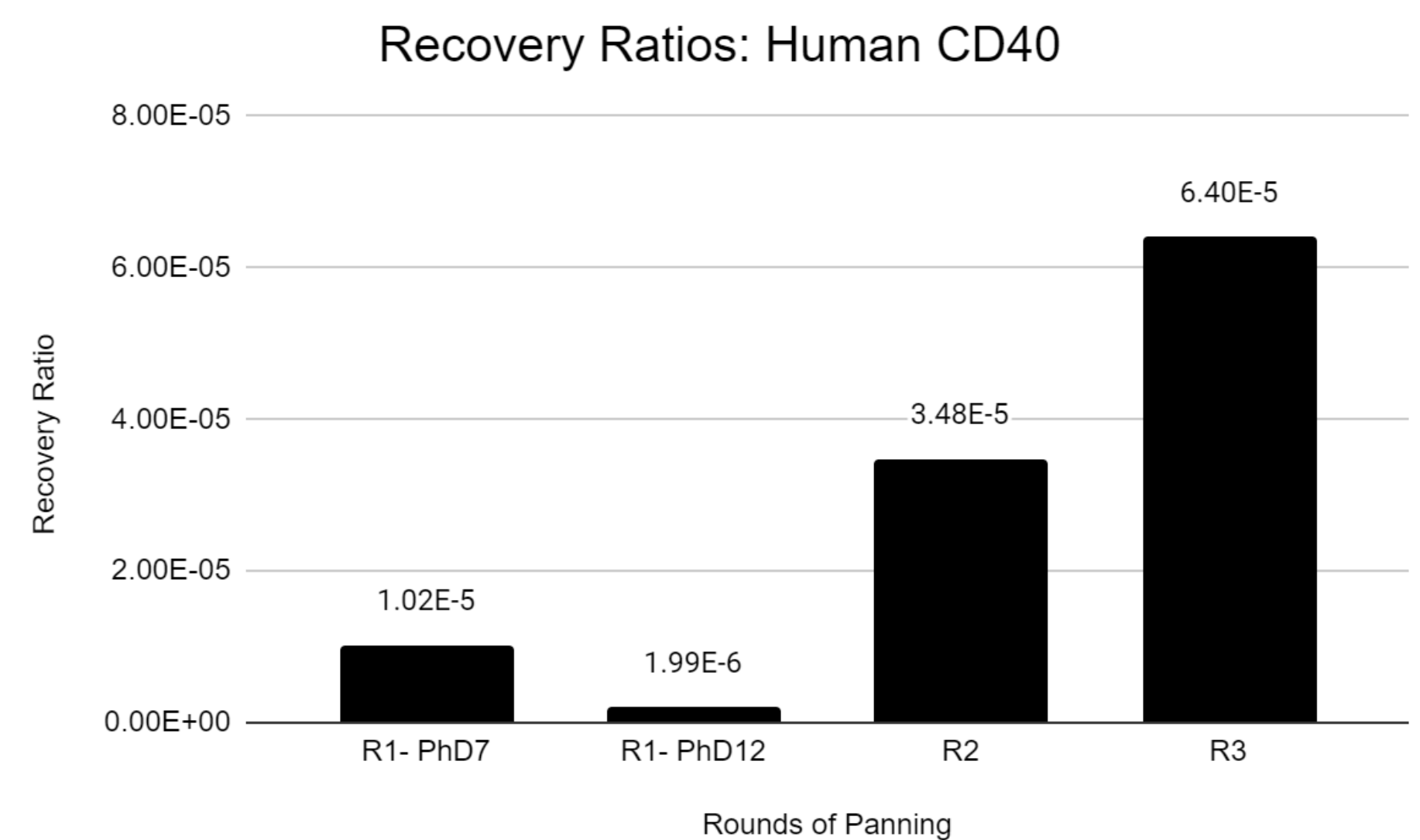
Biopanning is a process for identification of novel ligands capable of binding to a target. We performed this experiment by employing a peptide library presented on bacteriophage M13, so called phage display. The library of bacteriophage expresses randomized set of peptide sequences at the end of pIII proteins. Phages capable of binding to the target are kept while the rest of the phages are washed away at every round of biopanning. The phage is then amplified in *Escherichia coli* ER2738 and used in additional rounds of panning. Eventually we aim to select the phage clones that express peptides with the strongest affinity towards the target.



### References

- <https://www.neb.com/faqs/0001/01/01/whatisphdphagedisplay>

## Key Findings/Results



3 sequences in the third round showed enrichment by appearing more than once in the results. The peptide AETVESCLAK is screened as a target-unrelated peptide. The peptide APTTWFNDSITGGG has a 95% chance of replicating faster than other phage. Therefore, FKQDAWEAVDIRGGG is the most promising candidate for further investigation as a novel peptide ligand against CD40.

## Future Plans

Two additional rounds of panning will be completed. The results from the 5<sup>th</sup> round will be sequenced.

## Acknowledgements

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