

Title: Supplementary Data 1:

Description: A list of the OL variant sequences. For each variant the list provides: variant name, variant sequence, predicted structure, computed R_{score} , and computed $\Delta\Delta G$. A separate list is provided for each CP used in the experiment (MCP, QCP, and PCP).

Title: Supplementary Data 2:

Description: A list of all primers used in the various experiments.

Title: Supplementary Data 3:

Description: Sequences used for the coat-proteins in the experiment.

Title: Supplementary Data 4:

Description: Sequences used for encoding the various RNA cassettes used for validation experiments in both bacteria and mammalian cells.

Title: Supplementary Data 5:

Description: List of all barcodes used in the oligo library to label the different variants.

Title: Supplementary Movie 1.

Description: MCP-BFP + 10xMS2-OL

Title: Supplementary Movie 2.

Description: PCP-GFP + 10xPP7-OL

Title: Supplementary Movie 3.

Description: MCP-BFP + QCP-mCherry + 10xMS2-OL + 10xQB-OL

Title: Supplementary Movie 4.

Description: PCP-GFP + 10xQ β -PP7 model

Title: Supplementary Movie 5.

Description: QCP-BFP + 10xQ β -PP7 model

Title: Supplementary Movie 6.

Description: QCP-BFP + 10xMS2-noWT (negative control)

Title: Supplementary Movie 7.

Description: PCP-GFP + 10xPP7 model