

MS2 Protein & *DnaJ* Sequences



AlphaFold-Multimer [Map the *DnaJ* binding interface]



RFDiffusion [Design a stable, independent N-terminal scaffold]



ProteinMPNN [Generate amino acid sequences for the new scaffold]



ESMFold [Confirm the new single-chain mutant folds correctly]



AlphaFold-Multimer [Confirm the mutant no longer binds to *DnaJ*]



Final L Protein Mutant for Synthesis