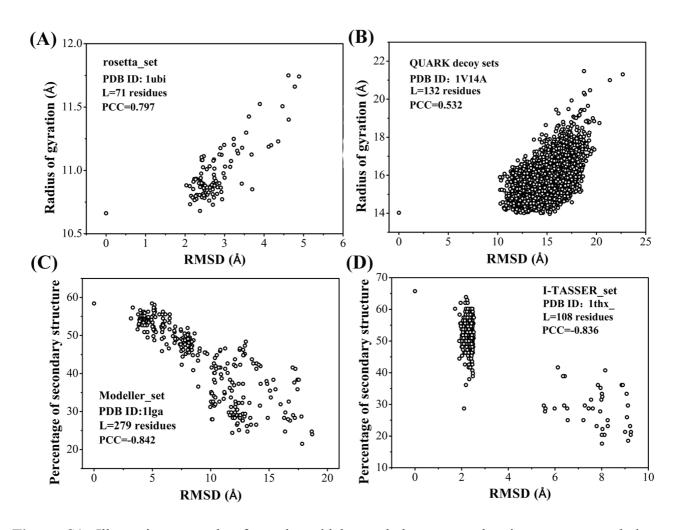
## **3DRobot: Automated Generation of Diverse and Well-packed**

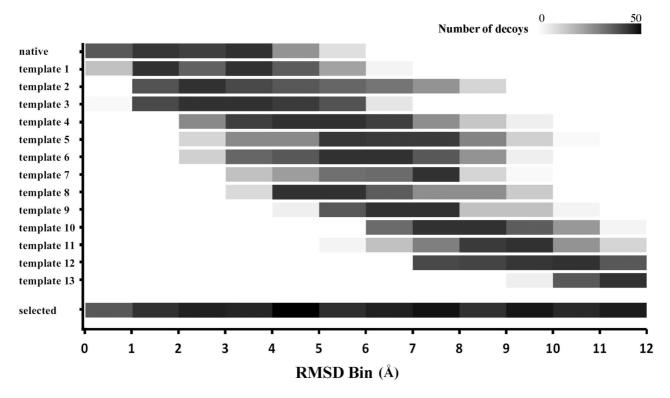
## **Protein Structure Decoys**

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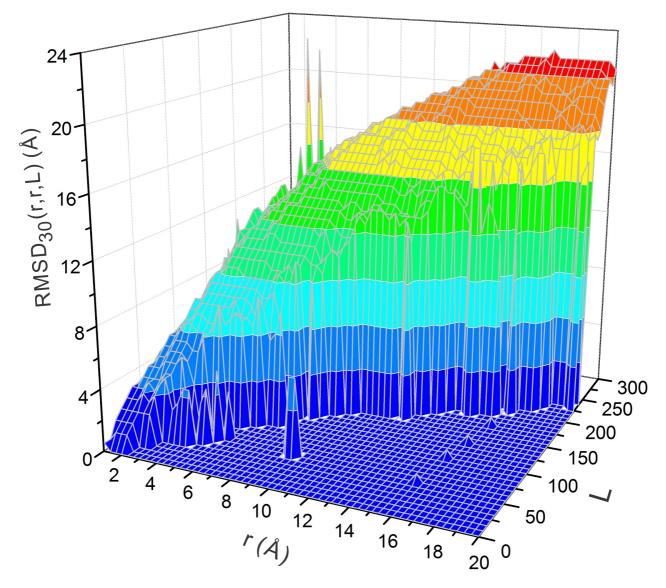
## SUPPLEMENTAL INFORMATION



**Figure S1.** Illustrative examples from the widely used decoy sets showing strong correlation between RMSD and secondary structure density or radius of gyration. (A) 1ubi from Rosetta\_set; (b) 1V14A from QUARK decoy set; (c) 1lga from Modeller\_set; (d) 1thx\_from the I-TASSER\_set.



**Figure S2.** An illustrative example showing how decoys are selected from outputs of simulation based different structural template.



**Figure S3.** Average RMSD of random protein structure pairs for a given length (L) with a given distance (r) to the reference protein structures.

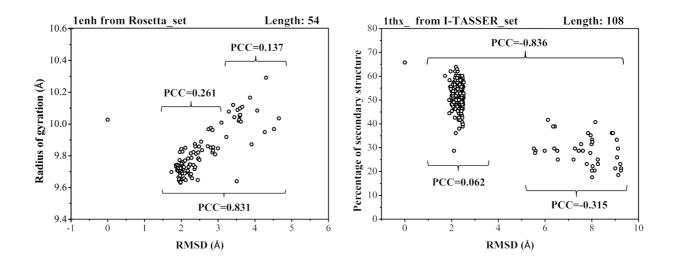


Figure S4. The Pearson correlation depends on the range of RMSD of the decoys.