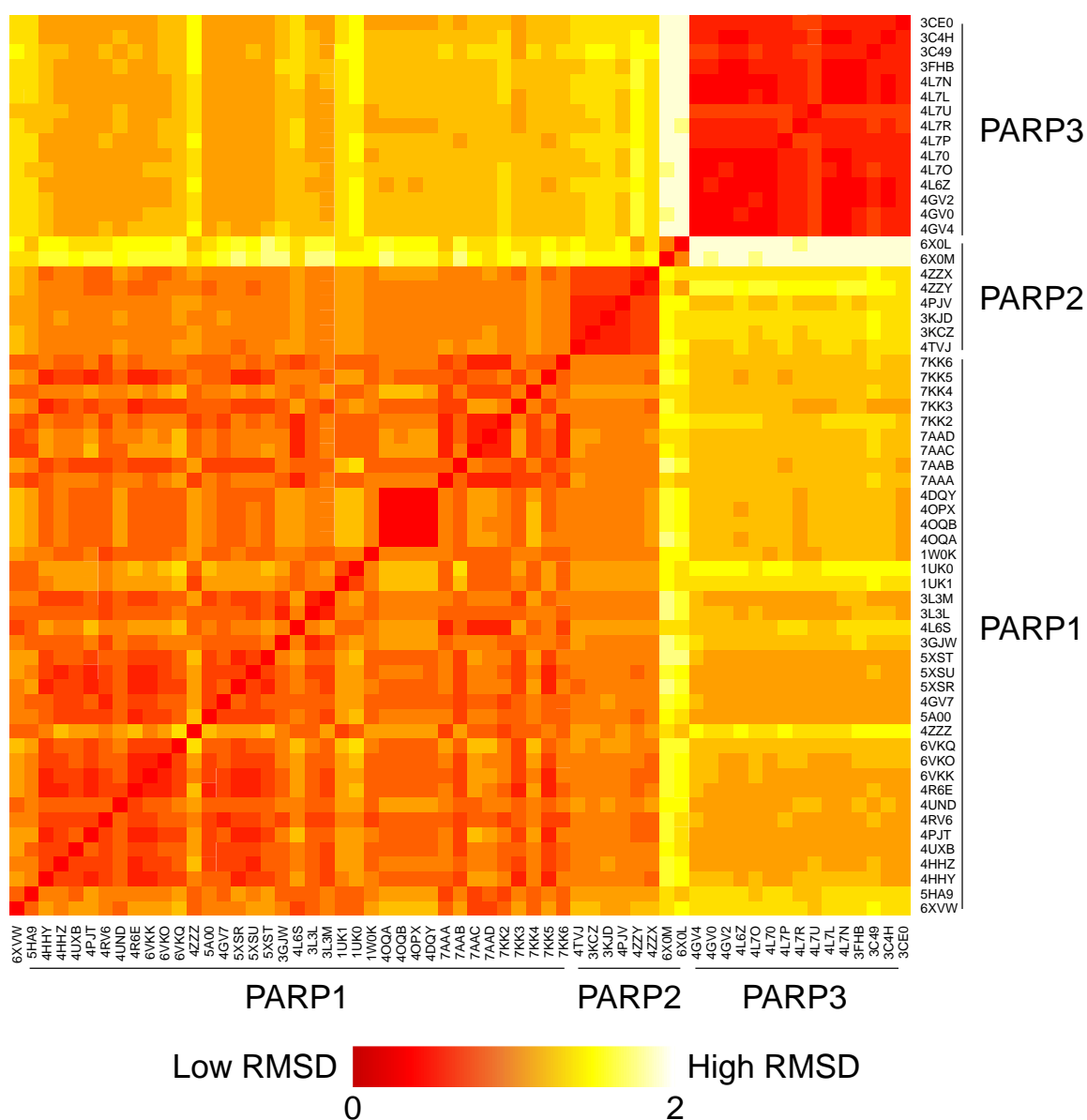
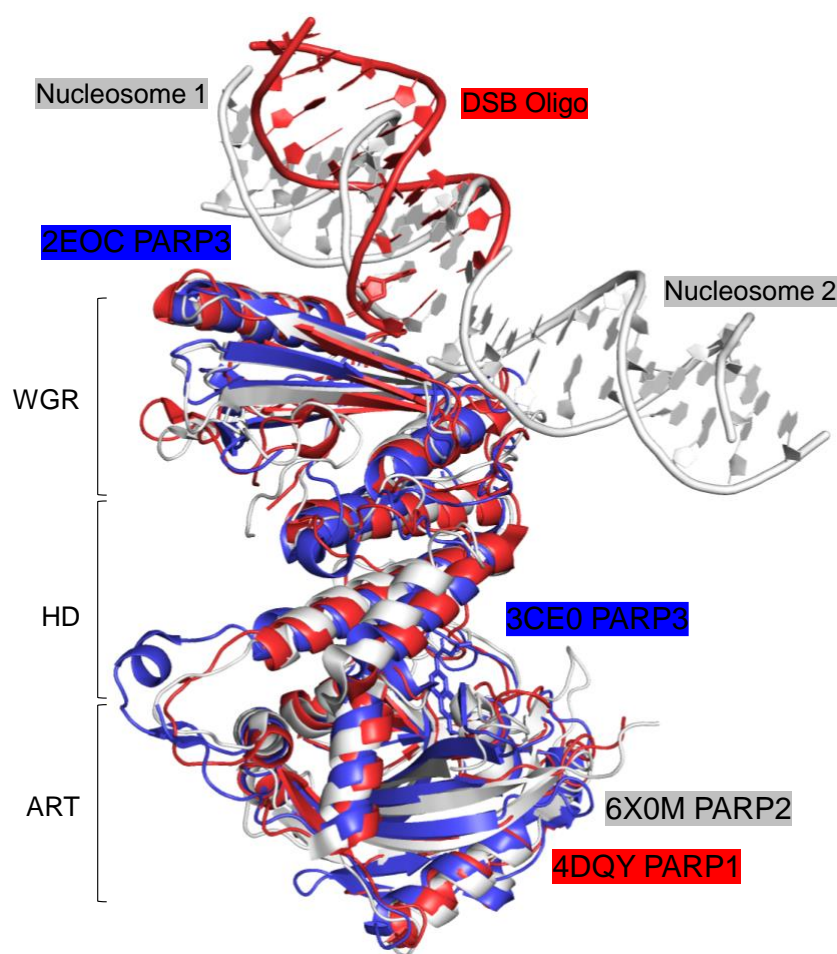


Supplementary Figures



Supplementary Figure 1. A similarity matrix showing the RMSD generated from the ‘all-against-all’ (Copyright (c) 2004 Robert L. Campbell [1]) comparison of the CAT (ART and HD) domains of PARP1, PARP2, and PARP3 from published sources (PDB). Red represents a low $\text{C}\alpha$ RMSD and yellow a higher RMSD of 2.



Supplementary Figure 2. An alignment of the CAT and WGR Domains of PARP1, PARP2, and PARP3. Structural superposition and figure were made in PyMOL [2]. PARP1 (red, PDB 4DQY [3]) is taken from a crystal structure of PARP1 bound to one side of a DSB model. PARP2 (white, PDB 6X0M [4]) is taken from a cryo-EM structure of PARP2 bound to HPF1 bridging a DSB between two nucleosomes. The WGR domain of PARP3 is a solution NMR structure (blue, PDB 2EOC) and the CAT domain is a crystal structure (blue, PDB 3CE0 [5]).

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