Summary of integrative structure determination of USP7 bound to a nucleosome/p53 complex (PDB ID: 9A9W | pdb_00009a9w)

1. Model Composition	
1.1. Entry composition	- Histone H3.1: chain(s) A, E (139 residues) - Histone H4: chain(s) B, F (106 residues) - Histone H2A: chain(s) C, G (133 residues) - Histone H2B: chain(s) D, H (128 residues) - DNA 153-mer: chain(s) I (153 residues) - DNA 153-mer: chain(s) J (153 residues) - Cellular tumor antigen p53: chain(s) K, L, M, N (417 residues) - Ubiquitin carboxyl-terminal hydrolase 7: chain(s) O (1126 residues) - ZINC ION: chain(s) P, Q, R, S
1.2. Datasets used for modeling	- Crosslinking-MS data, PRIDE: PXD054141 - 3DEM volume, EMDB: EMD-53517 - De Novo model, AlphaFoldDB: AF-Q93009-F1-v4 - Experimental model, PDB: pdb_00009r04 - De Novo model, Not available
2. Representation	
2.1. Number of representations	1
2.2. Scale	Atomic
2.3. Number of rigid and flexible segments	0, 20
3. Restraints	
3.1. Physical principles	Information about physical principles was not provided
3.2. Experimental data	- 1 unique CrossLinkRestraint: DSSO, 90 crosslinks - 1 unique EM3DRestraint: Flexible fitting
4. Validation	
4.2. Number of ensembles	0
4.3. Number of models in ensembles	Not applicable
4.4. Number of deposited models	1
4.5. Model precision	Not available
4.6. Data quality	EMD-53517: resolution is 3.90 Å
4.7. Model quality: assessment of atomic segments	- Clashscore: 2.78 - Ramachandran outliers: 9 - Sidechain outliers: 14

4.8. Fit to data used for modeling	- Satisfaction of crosslinks: 64.00% - 3DEM q-score(s): 0.12 - 3DEM atom inclusion score(s): 0.74
4.9. Fit to data used for validation	Fit of model to information not used to compute it has not been determined
5. Methodology and Software	
1. *5.1. Method name*	Structure prediction
5.3. Method description	Structure prediction
2. *5.1. Method name*	Rigid body fitting
5.3. Method description	Rigid body fitting of subunits into 3DEM map
3. *5.1. Method name*	Model editing
5.3. Method description	Manual editing of model
4. *5.1. Method name*	Flexible fitting
5.2. Method type	Molecular dynamics flexible fitting
5.3. Method description	Molecular dynamics flexible fitting with 3DEM potentials, self-restraints, and cross-linking restraints
5. *5.1. Method name*	Refinement
5.2. Method type	Maximum-likelihood refinement
5.3. Method description	Constrained refinement
5.5. Software	- AlphaFold Multimer (version 2.3) - ChimeraX (version 1.8) - Coot (version 0.9.8.1) - Isolde (version 1.7) - Phenix (version 1.20.1)