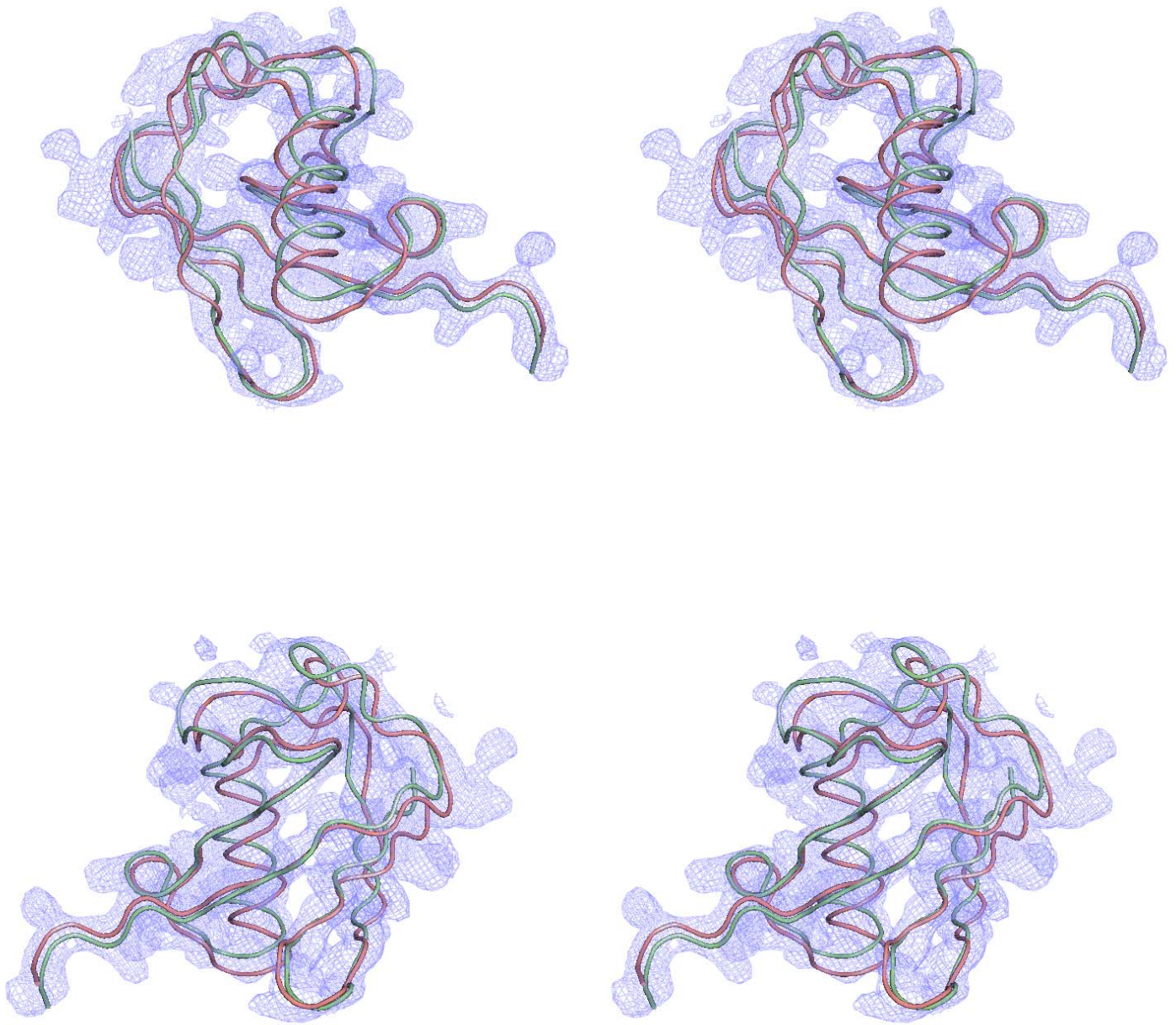


Diagram of the protein topology of split PCNA

- Supplementary Figure 1-

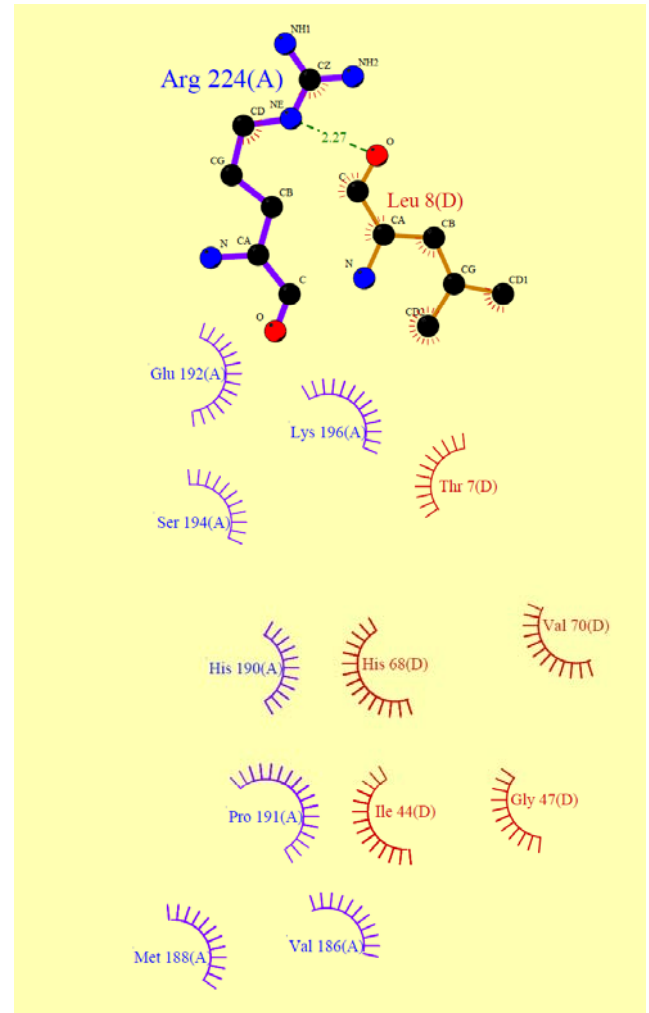
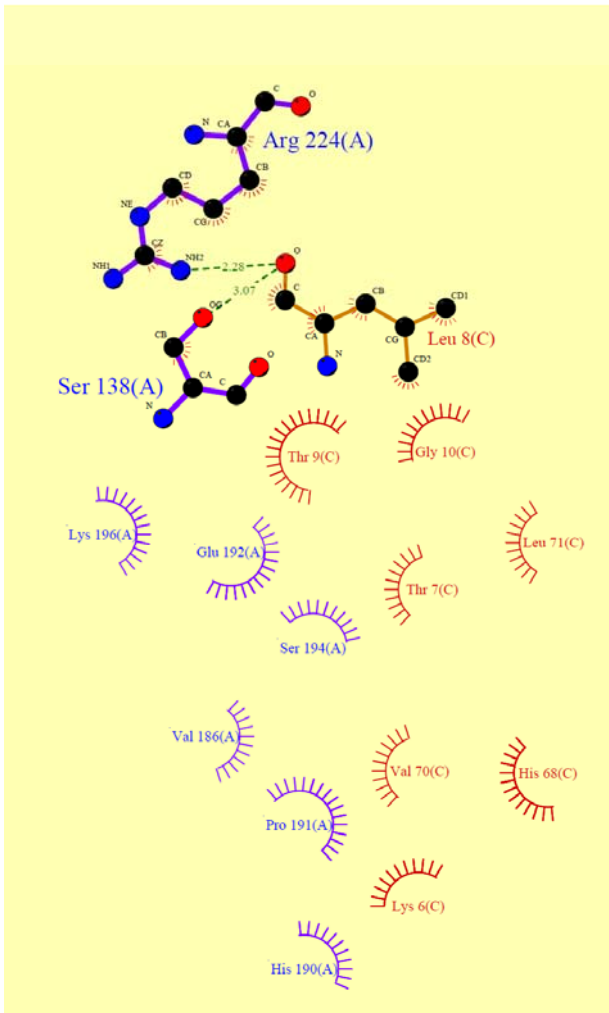


Stereo images of the electron density (level=1.2) of the ubiquitin moiety. The backbone of ubiquitin in position 1 is shown in red, and the backbone of ubiquitin in position 2 is shown in green. The bottom set of stereo images is rotated 180° relative to the top set of stereo images.

- Supplementary Figure 2 -

Ubiquitin in position 1

Ubiquitin in position 2



Key

- Residues of first surface
- Residues of second surface
- Hydrogen bond and its length
- ⌋ Residues involved in hydrophobic contact(s)
- ⌋ Residues involved in hydrophobic contact(s)
- Corresponding atoms involved in hydrophobic contact(s)

Diagrams of the hydrophobic, electrostatic, and hydrogen bonding interactions between ubiquitin and PCNA

- Supplementary Figure 3 -

SUPPLEMENTARY TABLES

Supplementary Table 1. Steady state kinetic parameters of nucleotide incorporation opposite an abasic site by pol η .

| <i>Proteins</i> | V_{max} (<i>nM/min</i>) | K_m (μM) | V_{max}/K_m | <i>Relative efficiency</i> |
|----------------------------------|--------------------------------|----------------------|---------------|----------------------------|
| Pol η alone | 0.26 ± 0.01 | 22 ± 5 | 0.012 | 1.0 |
| Pol η + non-split PCNA | 0.36 ± 0.01 | 12 ± 2 | 0.030 | 2.5 |
| Pol η + split PCNA | 0.21 ± 0.01 | 6.6 ± 2 | 0.032 | 2.7 |
| Pol η + ^{Ubi} PCNA | 0.28 ± 0.01 | 6.1 ± 1 | 0.046 | 3.8 |