

## Supplementary Figure Legends

**Figure S1.** Comparison of excision products from substrate B (■) or substrate C (▲). The radioactivity in product bands of 23-mer and smaller products in Figure 1A bottom panel was quantitated and expressed as the percentage of total input radioactivity.

**Figure S2.** Validation of the sensitivity of mutant CHO Cells to UV light. Cells were exposed to different dosage of UV light and clonogenicity was determined. AA8, ■; UV61, ▲; UV24, ▼; UV5, ◆; UV41, ●; UV135, □. Points, mean of three independent experiments ± S.D.

**Figure S3. Rate of removal of CNDAC nucleotide from cellular DNA in ML-1 cells.** ML-1 cells were incubated with 0.06 μmol/L [<sup>3</sup>H]CNDAC (●), 15 nmol/L [<sup>3</sup>H]ara-C (▲), or with 0.3 nmol/L [<sup>3</sup>H]thymidine( ■) for 18 hours and washed into drug free medium. These drug concentrations did not affect clonogenic survival. Aliquots were taken at the indicated times and DNA was extracted. The rates of removal from DNA were determined by quantitating the amount of each labeled nucleoside that remained in DNA by liquid scintillation counting. DPM, disintegration per minute. Points are the mean ± S.D. of triplicate samples.

**Figure S4. Repletion of XPF rescues sensitivity to UV.** Cells were exposed to different dosage of UV light and clonogenicity was determined. AA8, ■; UV41, ▲; UV41 transfected with pcDNA3-XPF, ●; UV41 transfected with vector, ▼. Points, mean of three independent experiments ± S.D.