

**Supplementary Fig. S5.** DSB repair of a linear plasmid. Circular pYFP-N1 plasmid (uncut) or pYFP-1 linearized with restriction endonucleases to generate blunt, 5' complementary or 3' non-complementary overhangs were transfected into wt (black), *Ercc1*<sup>-/-</sup> (red), *Ku86*<sup>-/-</sup> (green) and *Ercc1*<sup>-/-</sup> *Ku86*<sup>-/-</sup> (blue) cells and YFP+ cells were sorted 48 hours after transfection. Data represent an average of three independent experiments the standard error of the mean.

\*p=0.005 relative to wt cells.