



**Figure S6** Asynapsed X chromosomes are defective in DSB repair. Diplotene (DI) stage nuclei from (A) *rad-54(ok615);him-8(me4)* and (B) *brc-2(tm1086);him-8(me4)* hermaphrodite germ lines possess a pair of asynapsed X chromosomes, indicated by white arrows and absence of H3K4me2 staining (green, left panels). (A) RAD-51 (yellow in merge) and (B) RPA::YFP (green in merge) persist on all chromosomes. Scale bars = 5  $\mu$ M.