

**Supplementary Figure 1. Mass spectrometry analysis of the purified RECQ4 complex mixture.** List of polypeptides identified in the RECQ4 immunopurified complex mixture. In addition to the proteins unique to RECQ4 IP listed in Figure 1D, common contaminants are also listed based on our control 293T IP and/or reported by others (Guo et al., 2009).

**Supplementary Figure 2. Helicase activities of the recombinant RECQ4 WT and triple mutant.** Helicase assays were carried out in the presence of 20nM of purified recombinant RECQ4 WT or triple mutants using <sup>32</sup>P-labeled duplex oligos. <sup>32</sup>P-labeled dissociated products were visualized by autoradiography following neutral PAGE.