

Supplementary figure 1. Genotypes of MEFs 1-4 by the genotyping PCR of *Wrn* and *p21* gene alleles.

The wild type PCR product of *Wrn* allele is 150bp, the knock out PCR product of *Wrn* allele is 250bp. The wild type PCR product of *p21* allele is 750bp, the knock out PCR product of *p21* allele is 900bp. The genotypes of MEF 1-4 are: 1. $Wrn^{-/-}$; 2. *p21*^{-/-}; 3. *p21*^{-/-} $Wrn^{-/-}$; 4. WT. The hz stands for the positive controls using heterozygous DNA template; The (-) stands for negative control with no template DNA.