

**Supplementary Table 1A: Primers to genotype knockout mice and wildtype littermates.**

| Gene        | Primers   | Product size   |
|-------------|---|--|
| <i>p53</i>  | Forward primer<br>CCCGAGTATCTGGAAGACAG<br>Reverse primer<br>ATAGGTCGGCGGTTTCAT          | 600 bp product to denote wildtype allele   |
|             | Forward primer<br>CTTGGGTGGAGAGGCTATTC<br>Reverse primer<br>AGGTGAGATGACAGGAGATC        | 280 bp product to denote <i>p53</i> knockout allele  |
| <i>ung</i>  | Forward primer<br>GTGAATGCAGGGCTCACTTAAGTC<br>Reverse primer<br>CAGTGCCTATAACTTCAGCTCC  | 493 bp product to denote wildtype allele and a 1.6-kb product to denote <i>Ung</i> knockout allele |
|             | Forward primer<br>GCCGGTCTTGTCGATCAGGATGATC<br>Reverse primer<br>CAGTGCCTATAACTTCAGCTCC | 600 bp product to denote <i>Ung</i> knockout allele  |
| <i>Msh6</i> | Forward primer<br>TGGAAGGATTGGAGCTACGG<br>Reverse primer<br>TTACCTCCTCCACTGACGTG        | 400 bp product to denote <i>Msh6</i> knockout allele   |
|             | Forward primer<br>CAAGCCCCTTTCTTTGTTTG<br>Reverse primer<br>ACCACTTCCTCATCCCTGG         | 550 bp product to denote wildtype allele   |

**Supplementary Table 1B: Primers to measure cDNA levels by Real Time PCR**

| Gene            | Forward primer            | Reverse Primer            |
|-----------------|---------------------------|---------------------------|
| <i>pol eta</i>  | GATGAGCCAGGACGCATTTG      | GTCTCAGAGCTGGCAATTGG      |
| <i>pol iota</i> | GAGCAGTGCTAAGAAAGGG       | CTTGATCAACACCCTCTGG       |
| <i>Msh 2</i>    | GCAGAGTGTTGTGCTTAGCA      | CCACGGCCATTTAATACCC       |
| <i>Aicda</i>    | GAGGGAGTCAAGAAAGTCACGCTGG | GGCTGAGGTTAGGGTTCCATCTCAG |