



Supplementary File 1: Mutational analysis of crypts from *PolgA*^{+/Mut} mice.

(a): Example 0.8% Agarose gel showing Long-range PCR products. The wild-type band is 14.5Kb; deleted species would appear as smaller bands. Only full-length bands were detected in both COX-positive and COX deficient crypts. **(b)**

Sequencing electropherograms showing examples of point mutations detected in COX deficient colonic crypts from *PolgA*^{+/mut} mice. **(i)** Electropherogram showing the homoplasmic m. 568 G>A transition in *MT-srRNA*. **(ii)** Electropherogram showing the heteroplasmic (75%) m.5647 C>T transition. This change predicts a proline to leucine amino acid change in *MT-CO1*. **(iii)** Electropherogram showing the homoplasmic m.11012 A>T transversion. This change predicts a leucine to phenylalanine amino acid change in *MT-ND4*. Wild-type homogenate sequences are shown in panels **(iv-vi)**.