**SUPPLEMENTARY FIGURES**

**Supplementary Figure 1. White blood cell counts.** B6.*Apc*+/+ and B6.*Apc*Min/+ strains were fed LFDCoco or HFDCoco for 60 days. Differential white blood cell counts were measure after 60 days of treatment. Values represent log of absolute cell numbers (*n*=4-6 males/group).  **#**P<0.05 in relation to B6.*Apc+/+* or B6.*ApcMin/+* fed the HFDCoco.

**Supplementary Figure 2.** **Type of dietary fat, not obesity status modulates polyp numbers – the 30 day study.** B6.*Apc*+/+ and B6.*Apc*Min/+ strains were fed the LFD or HFD with coconut, corn, or olive oil as a source of fat for 30 days. The final body weight (A), HOMA-IR (B), total number of polyps (C), and polyp mass (D) were measured in each mouse after day 30 of diet treatment. Values represent means ± s.e.m. (n=7-15 males/group). \*\*\*P<0.001 in relation to equivalent LFD-fed group. ###P<0.001 in relation to HFDCoco- or HFDCorn-fed groups.

**Supplementary Figure 3. HFD induces generation of C5a independent of obesity status.** Wild-type B6.*Apc*+/+, B6.*Apc*Min/+, Wild-type CSS.*Apc*+/+, and CSS.*Apc*Min/+ strains were maintained on the LFDCoco or HFDCoco for 60 days. Circulating levels of C5a were measured in the plasma after 60 days. It should be noted that A/J chromosome 2 is genetically deficient in C5, so it is expected that undetectable levels of activated C5a were observed in the A2. *Apc*+/+ and A2. *Apc*Min/+ strains. Values represent means ± s.e.m. (n=4-9 males/group). \*P<0.05 in relation to the same strain fed the LFDCoco.

**Supplementary Figure 4.** Distribution of Complement C3 staining in the small intestines of B6.*Apc*Min/+ mice. Fluorescence microscopy images of B6.*Apc*Min/+ small intestines immunostained for complement 3 (antibody recognizes epitopes in C3, C3b and C3c) and counterstained with nuclear DAPI. (*A,B*) Normal small intestine villi of B6. *Apc*Min/+ mice fed LFDCoco for 30 days. (*C,D*) Normal small intestine villi of B6. *Apc*Min/+ mice fed HFDCoco for 30 days. Complement C3 staining predominantly localizes to the lamina propria and along the epithelial basement membrane (examples indicated with arrowheads). (*E,F*) polyp in a B6. *Apc*Min/+ mice fed HFDCoco for 30 days. Normal mucosa (deep crypts and the surrounding stroma) beneath a polyp (left of the dashed line) are negative for complement C3; the stroma and, to a lesser extent, adenoma cells of the polyp stain for C3. (*G,H*) No primary antibody negative control using normal small intestine of B6. *Apc*Min/+ mice fed LFDCoco for 30 days. *(B, D, F, & H)* C3 antibody staining with nuclear DAPI counterstaining. For all images, the intestinal lumen is oriented to the top left. Scale bar: 50 µm.

**Supplementary Figure 5. Deficiency in complement component C3 reduces polyp number and mass in a dose-dependent manner.** B6.*Apc*Min/+ (+/+; Min/+) and the complement-deficient C3+/-; *Apc*Min/+ (C3+/-;Min/+), and C3-/-; ApcMin/+ (C3-/-;Min/+) strains were fed the LFDCoco or HFDCoco for 30 days. The total number of polyps (***A***), and polyp mass (***B***) were determined in the intestine of each mouse at day 30 of treatment. Values represent means ± s.e.m. (n=2-10/group). \*\*\*P<0.001 compared to the same strain fed the LFDCoco. #P<0.05, ##P<0.01 in relation to B6.*Apc*Min/+ fed the HFDCoco diet.