

**Supplementary Data\_Table S1:** Primers and Relative abundance of microbes resident in small intestine of mice when comparing the Apc-HF or Apc-DB groups with the Apc-LF control group

Microbes	Name	Forward Primer	Reverse Primer	Apc-LF	Apc-HF	Apc-DB
<b>Genera</b>	<i>Bacteroides</i>	CGTTCATTAGGCAGTTGGT	CGTAGGAGTTTGGACCGTGT	1.00±0.36	0.97±0.14	0.38±0.45
	<i>Bifidobacterium</i>	TCGCGTC(C/T)GGTGTGAAAG	CCACATCCAGC(A/G)TCCAC	1.00±11.71	1.07±0.17	0.07±0.11*
	<i>Desulfovibrio</i>	CCGTAGATATCTGGAGGAACATC AG	ACATCTAGCATCCATCGTTTACA GC	1.00±0.95	0.02±0.12*	0.17±0.11
	<i>Lactobacillus</i>	AGCAGTAGGGAATCTTCCA	CACCGCTACACATGGAG	1.00±0.36	0.83±0.14	0.91±0.45
	<i>Peptostreptococcus</i>	AGTGGCGAACGGGTGAGTAA	TGCGGTATTAATCGTCGTTTCC	1.00±0.27	0.47±0.16	3.62±2.67*
	<i>Prevotella</i>	AGCCAAGTAGCGTGCAGGAT	CTGCTGGCACGGAATTAGC	1.00±13.96	4.16±31.14	5.32±23.06
	<i>Streptococcus</i>	TAACTGACGCTGAGGCTCGAA	CGGAAAGGACCCAACACCTA	1.00±0.87	1.28±1.37	1.99±2.67
	<i>Turicibacter</i>	CAGACGGGGACAACGATTGGA	TACGCATCGTCGCTTGGTA	1.00±5.33	0.001±0.02*	0.80±4.34
<b>Species</b>	<i>A.muciniphila</i>	CAGCACGTGAAGGTGGGGAC	CCTTGCGGTTGGCTTCAGAT	1.00± 1.07	2.76±0.62	0.03±0.02*
	<i>B.longum</i>	CGTTGAATAAGCACCGGCTAA	ACCGCCTACGAGCCCTTAC	1.00±0.28	0.96±0.29	0.40±0.13
	<i>B.uniformis</i>	GTACAGTAGAGGCAGGCGGAAT	CGAGCATCAGCGTCAGTTACAG	1.00±1.12	0.59±0.72	0.77±1.17
	<i>B.angulatum</i>	CTTCGAATAAGCACCGGCTAA	ACCGCCTACGAGCTCTTACG	1.00±0.63	1.17±0.60	0.64±0.13
	<i>B.vulgatus</i>	CCGCAAGGCATCTGTGAAGGT	TGGCAGTCTGTGAGATCCTC	1.00±1.66	2.40±2.28	0.47±2.83
	<i>C.cocoides</i>	AAATGACGGTACCTGACTAA	CTTTGAGTTTCATTCTTGCGAA	1.00±3.45	0.67±0.42	0.60±2.04
	<i>C.leptum</i>	GCACAAGCAGTGGAGT	CTTCCTCCGTTTTGTCAA	1.00±0.93	0.14±0.23*	0.26±0.88
	<i>E.coli</i>	GTTAATACCTTTGCTCATTGA	ACCAGGGTATCTAATCCTGTT	1.00±2.50	3.48±4.48	19.11±37.33*
	<i>E.rectale</i>	AAGGGAAGCAACGCTGTGAA	CGGTTAGGTCAGTGGCTTC	1.00±0.45	1.49±0.27	0.13±0.21*
	<i>F.prausnitzii</i>	CCCTTCAGTGCCGAGT	GTCGCAGGATGTCAAGAC	1.00±1.34	11.96±3.87*	1.47±0.57
<i>P.distasonis</i>	TGCCTATCAGAGGGGGATAAC	GCAAATATTCCCATGCGGGAT	1.00±4.29	0.15±0.29	0.11±0.73	
<b>16S rDNA</b>	ACTCCTACGGGAGGCAGCAG	ATTACCGCGGCTGCTGG	N/A	N/A	N/A	

\* Indicates a significant difference when comparing the Apc-HF or Apc-DB groups with the Apc-LF control group.

**Supplementary Data\_Table S2:** Primers and Relative expressions of genes within *Wnt* pathway cascade when comparing the Apc-HF or Apc-DB groups with the Apc-LF control group

<i>Wnt</i> Pathway Cascade	Genes	Forward Primer	Reverse Primer	Apc-LF	Apc-HF	Apc-DB
<b>Wnts &amp; Wnt Antagonists</b>	<i>Wnt5A</i>	CCGGGCTTAATATTCCAATG	ACGCTTCGCTTGAATTCCT	1.00±0.74	7.00±1.64*	7.33±4.45
	<i>SFRP2</i>	TTGCTCTTTGTCTCCAGGATG	CGACATCATGGAAACCCTTT	1.00±0.20	1.88±0.40	3.15±1.19
	<i>SFRP4</i>	ATCATCCTTGAACGCCACTC	TCGAACACAAGTCCCTCTCA	1.00±3.40	3.22±.145	0.75±0.32
	<i>SFRP5</i>	TGTGCTCCATCTCACACTGG	CTGGACAACGACCTCTGCAT	1.00±0.45	2.37±0.65	3.81±1.72
<b>Receptors &amp; Signaling Transduction Genes</b>	<i>LRP6</i>	ATCGTTGCATTCTCTTTGCC	TCTGCGTGCTGCTGAGAG	1.00±1.09	3.55±0.68	11.76±8.87
	<i>Dvl</i>	GGCAACTTGGCATTGTCATC	GGTGCACGCCTACAAATTCT	1.00±0.92	2.69±1.04	3.91±1.02
	<i>APC</i>	CATGCCTGCTCTGAGATGAC	GCCAGGATCCAGCAAATAGA	1.00±0.24	3.20±0.59*	2.94±0.80*
	<i>GSK3B</i>	GTGGTTACCTTGCTGCCATC	GACCGAGAACCACCTCCTTT	1.00±0.75	5.51±1.05*	5.36±2.24
	<i>β-CATENIN</i>	CAGCTTGAGTAGCCATTGTCC	GAGCCGTCA GTG CAGGAG	1.00±0.94	5.25±1.10*	3.55±0.54
	<i>Akt</i>	CCATCGTTCTTGAGGAGGAA	CATGAACGACGTAGCCATTG	1.00±1.49	2.00±0.40	3.06±0.52
<b>Wnt-Signaling Target Genes</b>	<i>C-myc</i>	TGAAGTTCACGTTGAGGGG	AGAGCTCCTCGAGCTGTTTG	1.00±1.58	1.62±0.36	0.93±0.26
	<i>CyclinD1</i>	GGGTGGGTTGAAATGAAC	TCCTCTCCAAAATGCCAGAG	1.00±0.40	7.33±1.74*	4.46±2.00
	<i>Axin2</i>	TGCATCTCTCTGAGGCTG	ACTGACCGACGATTCCATGT	1.00±0.30	5.53±2.20*	3.88±2.25
	<i>Jnk1</i>	TTTGCTTCTGCTCATGATGG	GCTACGGGCTTCCAGGTC	1.00±0.29	4.37±0.63*	2.22±0.35*
	<i>p53</i>	TCCGACTGTGACTCCTCCAT	CTAGCATT CAGGCCCTCATC	1.00±1.04	2.26±0.62	2.71±1.26
	<i>C-Jun</i>	GGGACACAGCTTTCACCCTA	AAAAGTAGCCCCAACCTC	1.00±0.36	1.56±0.65	1.13±0.22
<b>GAPDH</b>		TTGATGGCAACAATCTCCAC	CGTCCCGTAGACAAAATGGT	N/A	N/A	N/A

\* Indicates a significant difference when comparing the Apc-HF or Apc-DB groups with the Apc-LF control group.