Supplementary Figures and tables

Supplementary Table 1: Diet characteristics

Diets	**AIN-93G**		**Ctrl Diet**		**EPA-FFA 2.5%**		**EPA-FFA 5%**	
	gm%	kcal%	gm%	kcal%	gm%	kcal%	gm%	kcal%
Protein	20	20	20	20	20	20	20	20
Carbohydrate	64	64	64	64	64	64	64	64
Fat	7	16	7	16	7	16	7	16
Total		100		100		100		100
Kcal/gm	4.0		4.0		4.0		4.0	
Ingredient	**gm**	**kcal**	**gm**	**kcal**	**gm**	**kcal**	**gm**	**kcal**
Casein	200	800	200	800	200	800	200	800
L-Cystine	3	12	3	12	3	12	3	12
Corn Starch	397.486	1589.944	397.486	1589.944	397.486	1589.944	397.486	1589.944
Maltodextrin 10	132	528	132	528	132	528	132	528
Sucrose	100	400	100	400	100	400	100	400
Cellulose, BW200	50	0	50	0	50	0	50	0
Soybean Oil	***70***	***630***	***0***	***0***	***0***	***0***	***0***	***0***
Corn Oil	***0***	***0***	***70***	***630***	***45***	***405***	***20***	***180***
EPA	***0***	***0***	***0***	***0***	***25***	***225***	***50***	***450***
t-Buthylhydroquinone	0.014	0	0.014	0	0.014	0	0.014	0
Mineral Mix S10022G	35	0	35	0	35	0	35	0
Vitamin Mix V10037	10	40	10	40	10	40	10	40
Choline Bitartrate	2.5	0	2.5	0	2.5	0	2.5	0
FD&C Yellow Dye #5	0	0	0	0	0	0	0	0
FD&C Red Dye #40	0	0	0.025	0	0	0	0.05	0
FD&C blue Dye #1	0	0	0.025	0	0.05	0	0	0
Total	**1000**	**4000**	**1000.05**	**4000**	**1000.05**	**4000**	**1000.05**	**4000**

Vitamin Mix V10037 (used at 10 gm/kg diet). Amount in 10 gm: Vitamin A Palmitate 4,000 IU; Vitamin D3 1,000 IU; Vitamin E Acetate 75 IU; Phylloquinone 0.75 mg; Biotin 0.2 mg; Cyancocobalamin 25 ug; Folic Acid 2 mg; Nicotinic Acid 30 mg; Calcium Pantothenate 16 mg; Pyridoxine-HCl 7 mg; Riboflavin 6 mg; Thiamin HCl 6 mg; Sucrose 9.7192

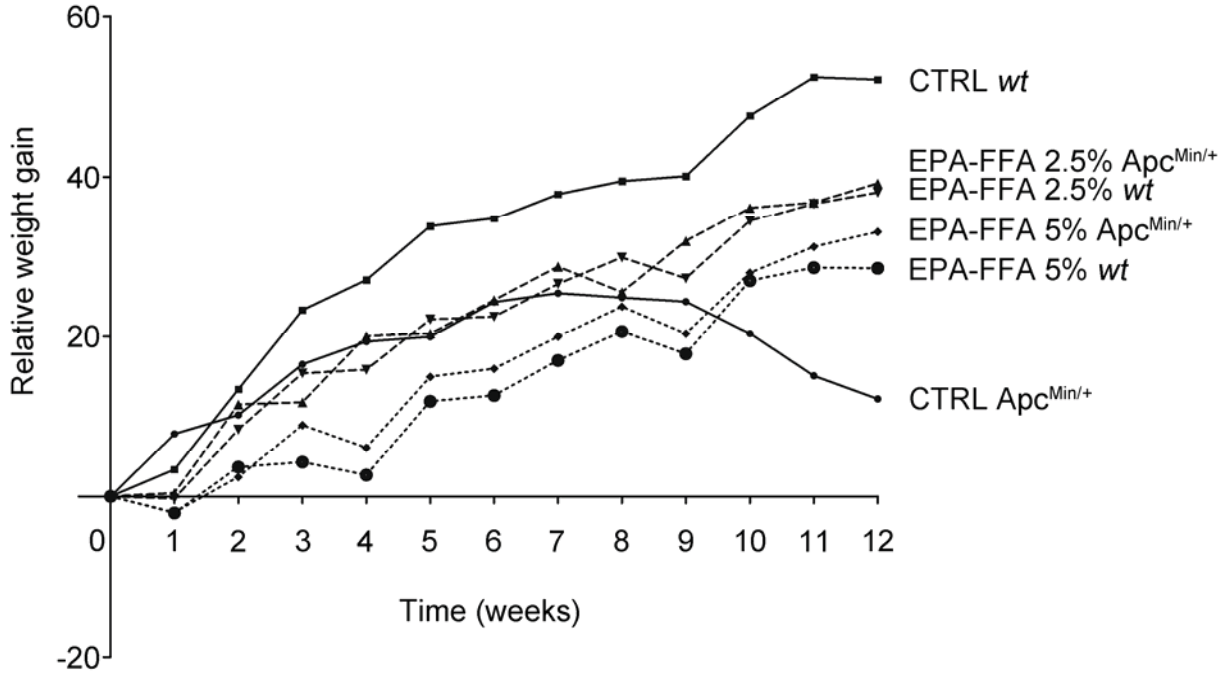
Mineral Mix S10022G (used at 35 gm/kg diet). Amount per 1000 gm of mix: Calcium Carbonate (40% Ca) 357 gm; Potassium Phosphate Monobasic (28.7% K, 22.8% P) 196 gm; Potassium Citrate(36.2% K) 70.78 gm; Potassium Sulfate (44.9% K, 18.4% S) 46.6 gm; Magnesium Oxide (60.3% Mg) 24 mg; Sodium Chloride (39.3% Na, 60.7% Cl) 74 gm; Cupric Carbonate (57.5% Cu) 0.3 gm; Potassium Iodate (59.3% I) 0.01gm; Ferric Citrate (21.2% Fe) 6.06 gm; Manganous Carbonate (47.8% Mn) 0.63gm; Sodium Selenate (41.8% Se) 0.01025 gm; Zinc Carbonate (52.1% Zn) 1.65 gm; Chromium K Sulfate 0.275 gm; Ammonium Molybdate 0.00795 gm; Sodium Silicate 1.45 gm; Lithium Chloride 0.0174 gm; Boric Acid 0.0815 gm; Sodium Fluoride 0.0635 gm; Nickel Carbonate 0.0318 gm; Ammonium Vanadate 0.0066 gm; Sucrose 221.026 gm.

Supplementary Table 2. Relative weight gain (in grams) over 12 weeks (T-01 to T-12, weeks 1-12) (mean±SD)

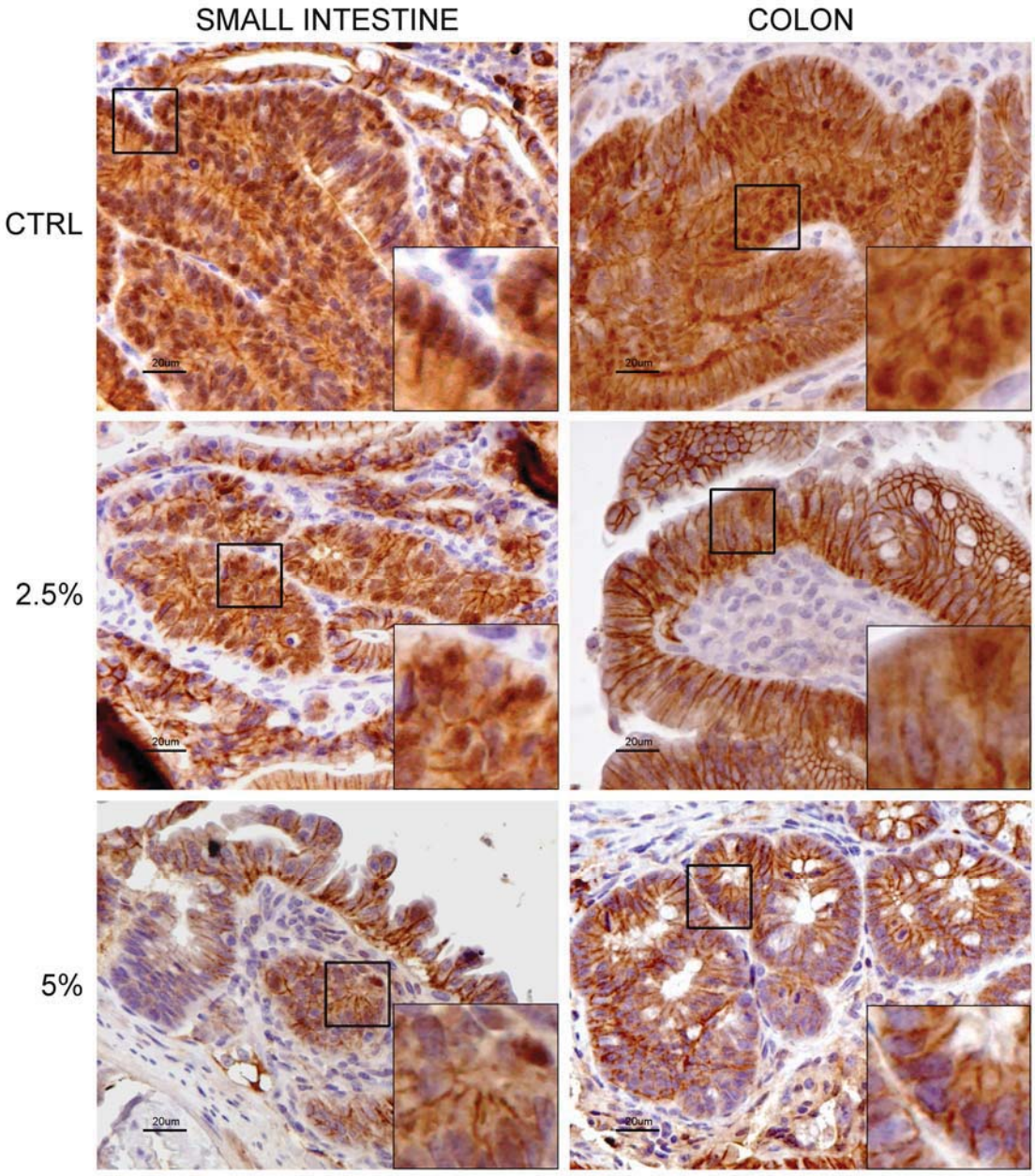
Time period	$Apc^{Min/+}$ mice			*Wild- type* mice		
	Ctrl	EPA-FFA 2.5%	EPA-FFA 5%	Ctrl	EPA-FFA 2.5%	EPA-FFA 5%
T-01	7.85± 4.09	0.44± 3.04	-2.00±1.70	3.38±3.45	-0.27±2.74	-2.07±3.89
T-02	10.20 ±4.63	11.51± 1.18	2.44±3.68	13.41± 6.84	8.36±5.73	3.68±5.61
T-03	16.52± 5.60	11.78 ±2.73	8.96±3.58	23.29± 10.57	15.40±6.67	4.31±5.36
T-04	19.34 ±5.19	20.03 2.66	6.12±3.65	27.05± 13.49	15.84±6.29	2.68±3.51
T-05	19.96± 7.32	20.35 ±2.72	14.97±5.13	33.77± 14.61	22.11±7.80	11.91±6.69
T-06	24.28± 10.59	24.50± 4.57	15.97±4.73	34.73± 15.83	22.44±8.37	12.62±6.46
T-07	25.39± 9.84	28.69± 4.16	19.95±6.08	37.83± 16.40	26.54±10.44	16.98±8.72
T-08	24.83± 11.13	25.51 ±5.32	23.71±7.62	39.47± 14.31	29.82±9.16	20.60±6.78
T-09	24.34± 14.06	31.87 ±5.67	20.34±7.44	40.10± 14.10	27.24±9.90	17.83±8.59
T-10	20.36± 15.86	36.10± 3.83	27.91±8.00	47.61± 13.26	34.39±9.25	26.94±9.06
T-11	15.10± 13.47	36.78 ±3.89	31.16±10.89	52.45± 13.04	36.63±8.23	28.57±8.50
T-12	12.20± 13.91	39.19± 4.87	33.02±11.59	52.15± 12.33	38.03±8.16	28.48±8.34

Supplementary table 3. Pairwise correlation analysis of mucosal fatty acid content

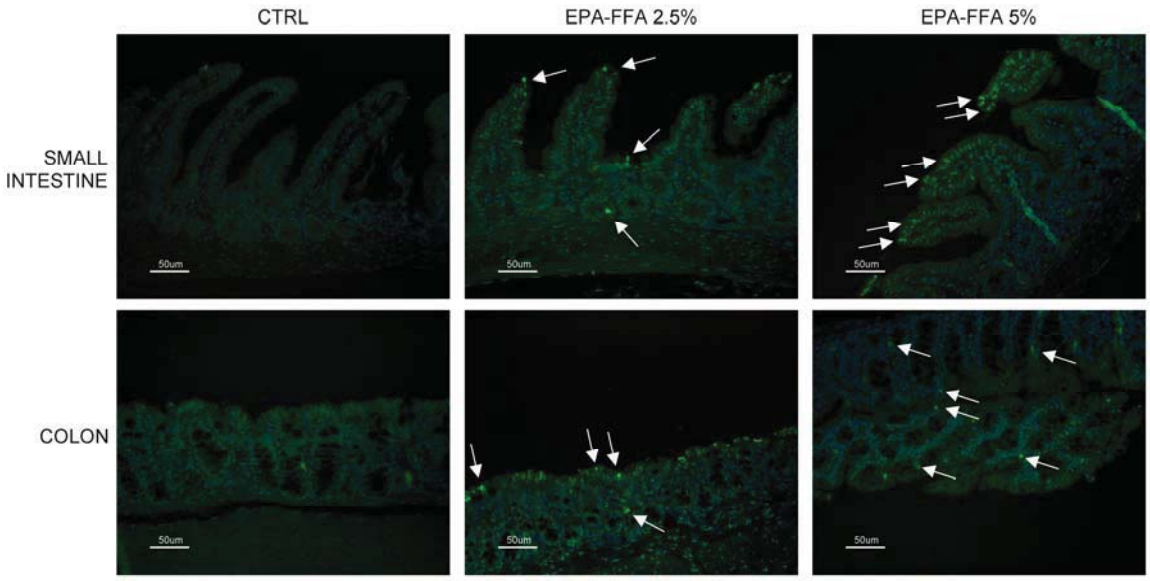
Variable	*Vs.* variable	Correlation	Lower 95%	Upper 95%	*p*
DPA	AA	-0.9060	-0.9589	-0.7920	<.0001
EPA	AA	-0.9053	-0.9586	-0.7907	<.0001
DHA	Linoleic	-0.5939	-0.8045	-0.2505	0.0022
DPA	Linoleic	-0.5915	-0.8033	-0.2471	0.0023
DHA	AA	-0.5861	-0.8003	-0.2393	0.0026
EPA	Linoleic	-0.4730	-0.7360	-0.0860	0.0196
AA	Linoleic	0.4577	0.0667	0.7269	0.0245
DPA	EPA	0.9395	0.8633	0.9738	<.0001
DHA	DPA	0.7168	0.4408	0.8689	<.0001
DHA	EPA	0.7100	0.4296	0.8655	0.0001



Supplementary Figure 1. Effect of EPA-FFA dietary supplementation on body weight in $Apc^{Min/+}$ and corresponding *wild-type* mice. EPA-FFA diets protected from the weight loss observed in $Apc^{Min/+}$ animals fed Ctrl diet.



Supplementary Figure 2. Representative β-catenin IHC in dysplastic tissues from the small intestines and colons of $Apc^{Min/+}$ mice. In the EPA-FFA treated groups, reduced β-catenin nuclear translocation was found in the small intestine, while the absence of nuclear staining was observed in the colon.



Supplementary Figure 3. EPA-FFA enhances apoptosis. Representative Tunel Assays in tissues from small intestine and colon of $Apc^{Min/+}$ mice. An increase in apoptosis was observed in the small intestine and colon of animals fed EPA-FFA 2.5% and 5%. Arrows indicate Tunel positive cells.