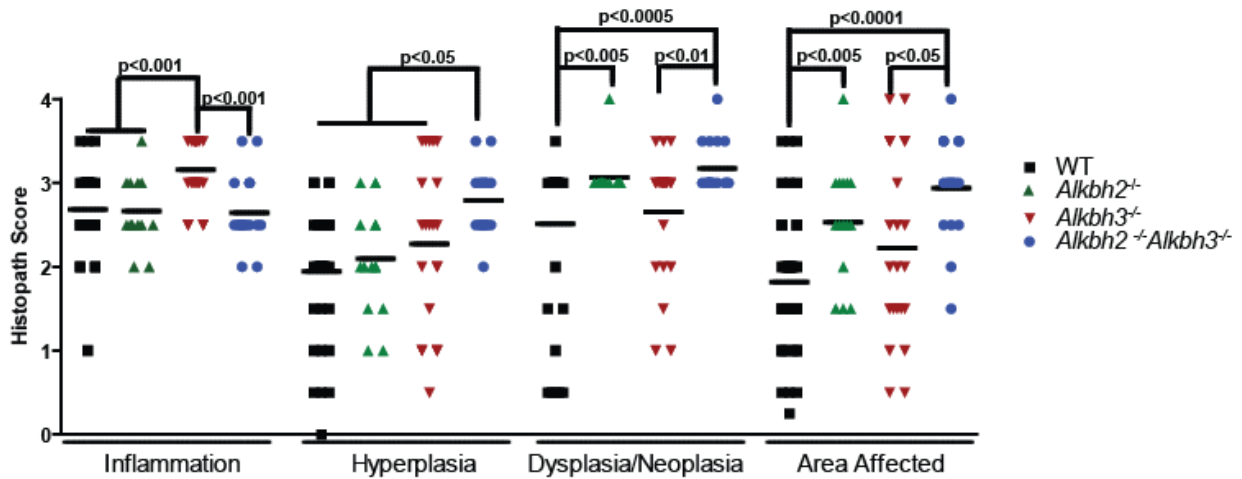
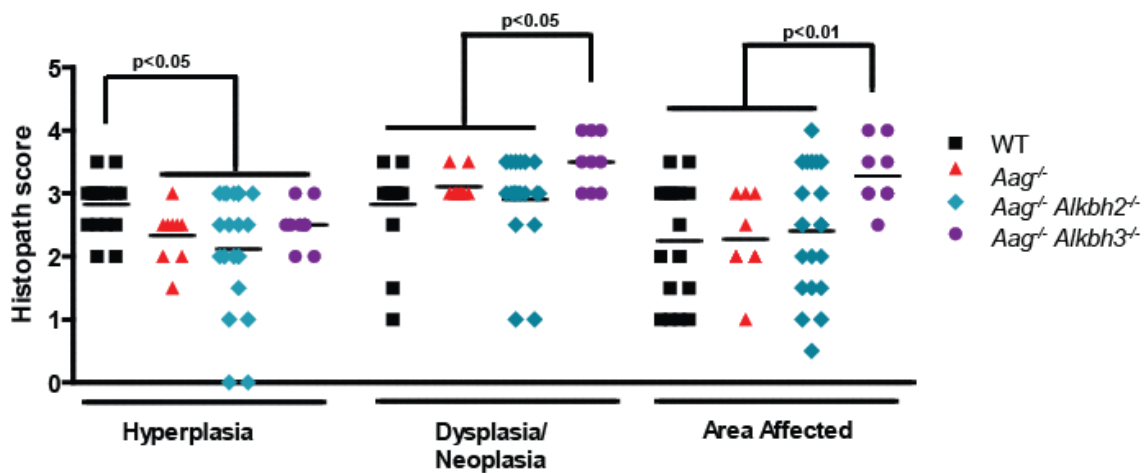


Supplemental Figure S1

A



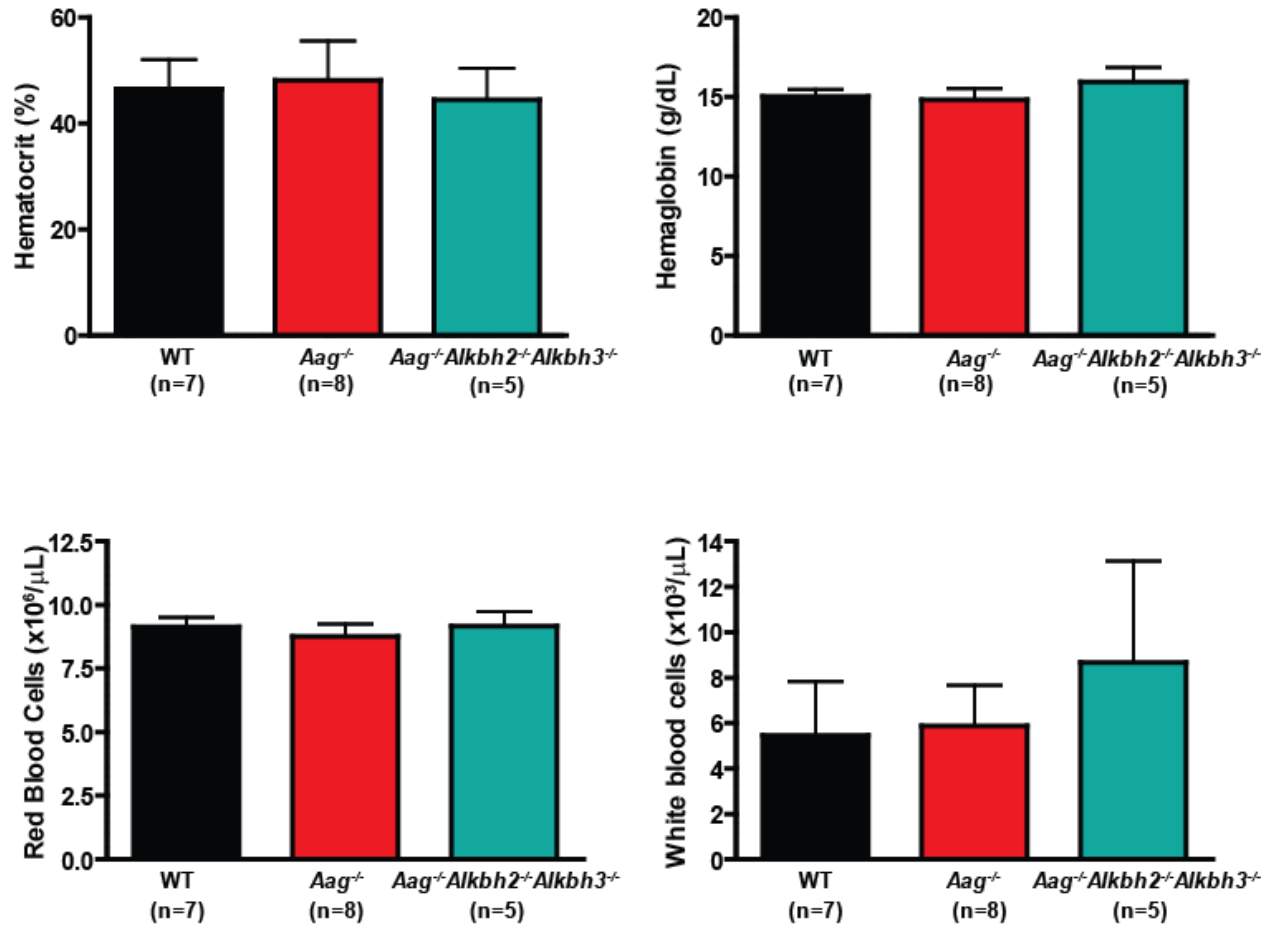
B



Supplemental Figure S1. Pathology scores following AOM+DSS treatment.

A) Pathology scores from WT (n=33), *Alkbh2*^{-/-} (n=14), *Alkbh3*^{-/-} (n=22) and *Alkbh2*^{-/-}*Alkbh3*^{-/-} (n=17) are shown for inflammation, hyperplasia, dysplasia and area affected. Each individual point represents one animal and the horizontal bar represents mean score. B) Pathology scores from WT (n=18), *Aag*^{-/-} (n=9), *Aag*^{-/-}*Alkbh2*^{-/-} (n=20) and *Aag*^{-/-}*Alkbh3*^{-/-} (n=9) for hyperplasia, dysplasia and area affected. Each individual point represents one animal and the horizontal bar represents mean score.

Supplemental Figure S2



Supplemental Figure S2. Complete blood count in WT, *Aag*^{-/-} and *Aag*^{-/-}*Alkbh2*^{-/-}*Alkbh3*^{-/-} mice following DSS treatment.

A complete blood count analysis was performed on WT (n=8), *Aag*^{-/-} (n=7) and *Aag*^{-/-}*Alkbh2*^{-/-}*Alkbh3*^{-/-} (n=5) mice illustrating the hematocrit (%), hemoglobin (g/dL), red blood cells (x10⁶/μl), and white blood cells (x10³/μl). Data is presented as mean ± SD.

Supplemental Table 1: Comparison of histopathological scores from WT, *Abh2*^{-/-}, *Abh3*^{-/-} and *Abh2*^{-/-} *Abh3*^{-/-} that were euthanized during and at the conclusion of the AOM+DSS treatment.

	Inflammation	Epithelial Defects	Crypt Atrophy	Hyperplasia	Dysplasia/ Neoplasia	Area Affected	Change in colon length (cm)	% spleen weight / BW	Number Polyps
wildtype									
during (n=6)	2.3 ± 0.75	2.75 ± 0.27	1.16 ± 0.25	2.00 ± 0.55	2.58 ± 1.02	2.33 ± 0.88	-1.26 ± 0.75	0.71 ± 0.43	9.88 ± 7.53
conclusion (n=27)	2.76 ± 0.42	2.39 ± 0.54	1.22 ± 0.47	1.89 ± 0.85	2.42 ± 1.00	1.60 ± 0.79	-1.89 ± 1.52	0.79 ± 0.35	6.92 ± 5.26
<i>Abh2</i>^{-/-}									
during (n=9)	2.6 ± 0.46	2.6 ± 0.70	1.5 ± 0.53	1.85 ± 0.63*	3.1 ± 0.32	2.55 ± 0.83	-2.05 ± 0.95	1.11 ± 0.47	12.33 ± 8.96
conclusion (n=5)	2.8 ± 0.27	2.3 ± 0.45	1.2 ± 0.57	2.6 ± 0.42*	3 ± 0.0	2.5 ± 0.35	-0.93 ± 1.20	1.11 ± 0.30	10.75 ± 1.5
<i>Abh3</i>^{-/-}									
during (n=9)	2.92 ± 0.38	2.58 ± 0.49	1.42 ± 1.28	2.00 ± 1.00	2.67 ± 0.52	2.50 ± 1.30	-3.16 ± 0.76***	1.04 ± 0.76	11.38 ± 7.96
conclusion (n=17)	3.25 ± 0.37	2.66 ± 0.47	1.34 ± 0.57	2.38 ± 0.96	2.66 ± 0.83	2.13 ± 1.04	-1.57 ± 0.62***	1.07 ± 0.49	9.13 ± 4.88
<i>Abh2</i>^{-/-} <i>Abh3</i>^{-/-}									
during (n=8)	2.69 ± 0.46	2.56 ± 0.42	1.19 ± 0.37	2.63 ± 0.35	3.19 ± 0.26	3.00 ± 0.60	-1.49 ± 0.48	1.73 ± 0.68	20.29 ± 9.43
conclusion (n=9)	2.61 ± 0.42	2.72 ± 0.51	1.22 ± 0.57	2.94 ± 0.39	3.17 ± 0.35	2.89 ± 0.65	-1.47 ± 0.63	1.41 ± 0.69	20.44 ± 7.20

Data is shown as mean ± SD. Any statistical difference between values harvested during treatment and conclusion of treatment are indicated as * p<0.05, ** p<0.01, *** p<0.001.

Supplemental Table 2: Comparison of histopathological scores from WT, *Aag*^{-/-}, *Aag*^{-/-} *Abh2*^{-/-}, and *Aag*^{-/-} *Abh3*^{-/-} that were euthanized during and at the conclusion of the AOM+DSS treatment.

	Inflammation	Epithelial Defects	Crypt Atrophy	Hyperplasia	Dysplasia/ Neoplasia	Area Affected	Change in colon length	% spleen weight / BW	Polyps
wildtype									
during (n=0)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
conclusion (n=18)	2.86 ± 0.54	2.44 ± 0.45	1.472 ± 0.72	2.83 ± 0.42	2.83 ± 0.62	2.25 ± 0.91	-0.63 ± 0.71	0.97 ± 0.82	7.67 ± 3.18
<i>Aag</i> ^{-/-}									
during (n=7)	2.64 ± 0.38	2.57 ± 0.35	1.29 ± 0.64	2.29 ± 0.49	3.14 ± 0.24	2.29 ± 0.76	-2.06 ± 0.31	0.85 ± 0.65	21.43 ± 9.88
conclusion (n=2)	2.0 ± 0.0	2.0 ± 0.0	0.75 ± 0.35	2.5 ± 0.0	3.0 ± 0.0	2.25 ± 0.35	-1.45 ± 1.06	1.14 ± 0.25	18.50 ± 2.12
<i>Aag</i> ^{-/-} <i>Abh2</i> ^{-/-}									
during (n=7)	2.42 ± 0.57	2.62 ± 0.51**	1.23 ± 0.75	2.08 ± 0.98	3.00 ± 0.68	2.73 ± 0.95	-2.15 ± 0.72	0.72 ± 0.39*	23.00 ± 11.98
conclusion (n=13)	2.71 ± 0.39	2.07 ± 0.35**	1.36 ± 0.56	2.50 ± 0.41	3.00 ± 0.29	2.00 ± 0.87	-2.01 ± 0.43	1.21 ± 0.28*	21.57 ± 9.50
<i>Aag</i> ^{-/-} <i>Abh3</i> ^{-/-}									
during (n=5)	2.75 ± 0.50	2.38 ± 0.48	0.63 ± 0.25**	2.50 ± 0.41	3.38 ± 0.48	3.38 ± 0.48	-1.78 ± 0.83	1.65 ± 0.73	23.25 ± 9.74
conclusion (n=4)	3.10 ± 0.42	3.00 ± 0.35	1.80 ± 0.57**	2.50 ± 0.35	3.60 ± 0.42	3.2 ± 0.57	-2.14 ± 0.48	0.85 ± 0.41	11.80 ± 10.54

n.a. (not applicable) indicates all mice survived the AOM+DSS treatment. Data is shown as mean ± SD. Any statistical differences between values during treatment and conclusion of treatment are indicated as * p<0.05, ** p<0.01, *** p<0.001.