Supplemental Figure 1. Quantitation of Western blots following UGT1A silencing in LS180 and HT29 colon epithelial cells. Western blots from actinomycin D and etoposide treated cells from LS180 (**Figure 1B**) and HT29 (**Figure 1C**) cells were quantitated using imaging software from the BioRad ChemiDoc Touch Imaging System and plotted as Relative Signal Intensity or t/c (target protein/internal reference protein-GAPDH). Statistically significant differences in inducible p53 expression along with p21, Bax, caspase 3 and caspase 9 expressions were demonstrated following knockdown of the *Ugt1a* locus in these cells.

Supplemental Figure 2. Western blot quantitation following treatment with DSS. Following treatment with DSS, colon tissue was collected from $Ugt1^{F/F}$ and $Ugt1^{\Delta IEC}$ mice and Western blots performed on total cell extracts (**Figure 4**). Quantitation of the proteins were conducted and plotted as relative values from three separate experiments.

Supplemental Figure 3. No marked changes in the severity of ulcer or inflammatory gene expression in colon tissues between $Ugt1^{\Delta IEC}$ and $Ugt1^{F/F}$ mice following DSS treatment. Colon tissues from 3% DSS-treated or untreated $Ugt1^{\Delta IEC}$ and $Ugt1^{F/F}$ mice were used to prepare total samples of total RNA. (A) Expression of inflammatory genes was quantitated by real-time PCR, and normalized to the level of cyclophilin mRNA. (B) Colitis score quantified by stool occult blood, rectal prolapse, and diarrhea. Results are presented as mean ± SD of at least four mice. (C) Quantification of the number of ulcers by analyzing H&E-stained sections. (D) Colon ulcers are shown by H&E staining (200 X Magnification).

Supplemental Figure 4. Western blot quantitation following AOM (A) and DSS (D) treatment as outlined in Figure 6A.

Supplemental Figure 5. *P53* gene expression analysis.

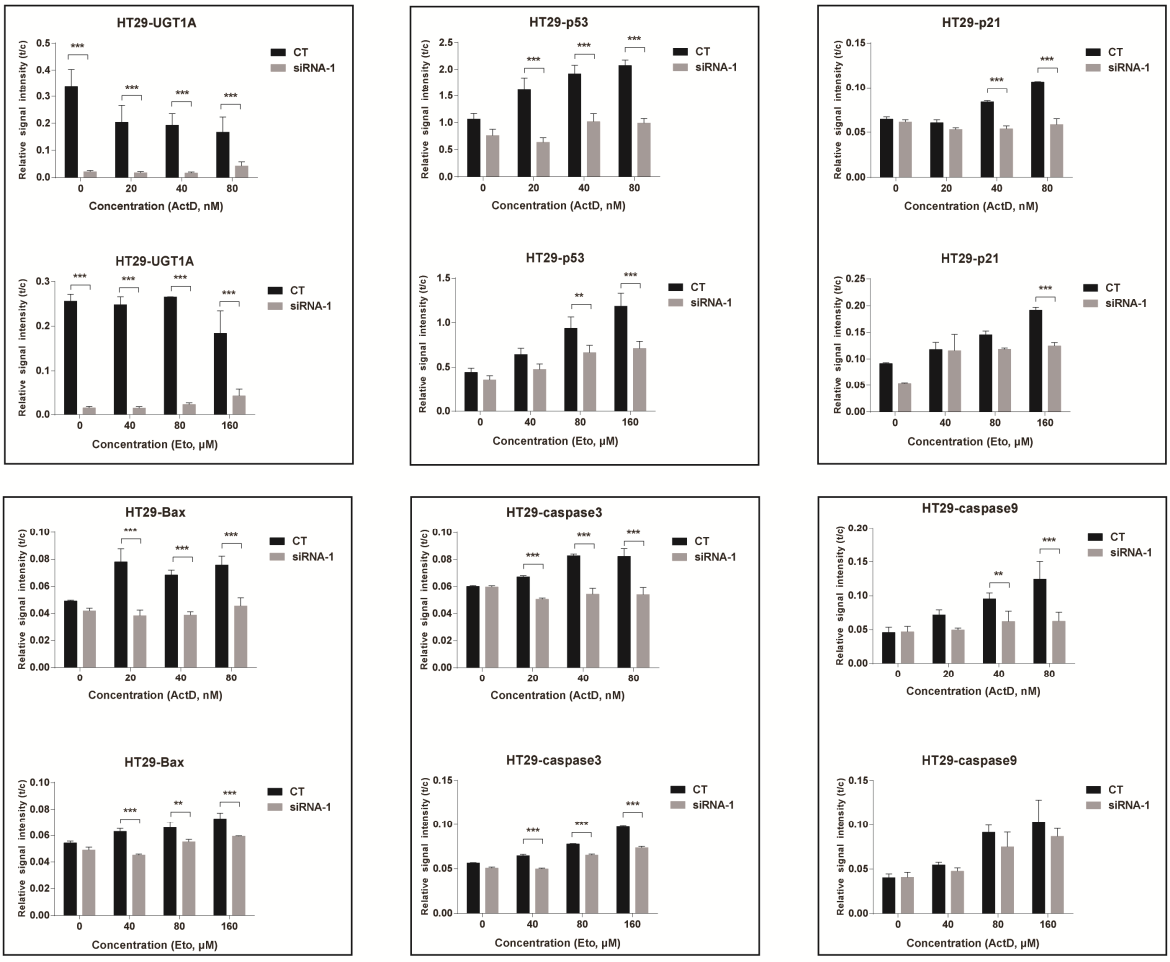
Human HT29 and LS180 cells treated with actinomycin D or etoposide following siRNA knockdown of the *UGT1* locus were used to quantitate by real time PCR gene expression of the *p53* gene. Similar quantitation was performed using intestinal RNA from $Ugt1^{F/F}$ and $Ugt1^{\Delta IEC}$ mice following DSS treatment to induce intestinal inflammation.

Supplemental Table 1.

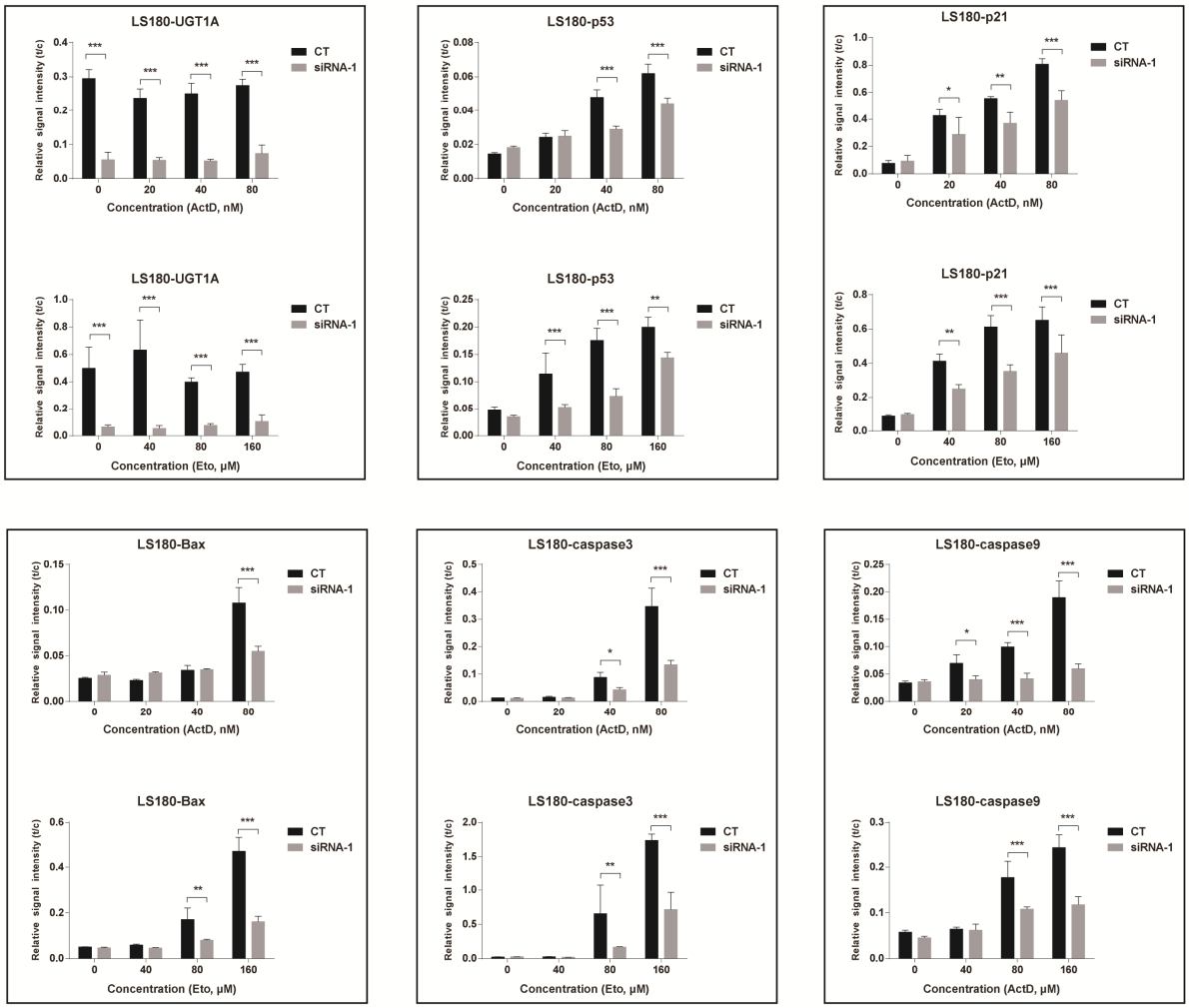
Sequences of the primers used in the study.

Primer	Forward	Reverse
TNFα	5'-CATCTTCTCAAAATTCGAGTGACAA-3'	5'-TGGGAGTAGACAAGGTACAACCC-3'
IL-1β	5'-GCAACTGTTCCTGAACTCAACT-3'	5'-ATCTTTTGGGGTCCGTCAACT-3'
IL-6	5'-GAGGATACCACTCCCAACAGACC-3'	5'-AAGTGCATCATCGTTGTTCATACA-3'
IL-8	5'- ATGCCCTCTATTCTGCCAGAT-3'	5'-GTGCTCCGGTTGTATAAGATGAC-3'
human P53	5'-GAGGTTGGCTCTGACTGTACC-3'	5'-TCCGTCCCAGTAGATTACCAC-3'
human ATF-4	5'-TTAAGCCATGGCGCTTCTCA-3'	5'-GGTCGAAGGGGGACATCAAG-3'
human sXBP-1	5'-TTAAGACAGCGCTTGGGGAT-3'	5'-GCAGAGGTGCACGTAGTCTGA-3'
human GRP-78	5'-CCCGTGGCATAAACCCAGAT-3'	5'-TGGTAGGCACCACTGTGTTC-3'
human GRP-94	5'-GCCAGTTTGGTGTCGGTTTC-3'	5'-GGGTAATTGTCGTTCCCCGT-3'
human actin	5'-GGCGGCACCACCATGTACCCT-3'	5'-AGGGGCCGGACTCGTCATACT-3'
mouse p53	5'-CCAAACTGCTAGCTCCCATCA-3'	5'-GGCCCCACTTTCTTGACCAT-3'
mouse ATF-4	5'-AATTCGTCAACGAGCGATCC-3'	5'-CTGCTGCCTCTAATACGCCA-3'
mouse sXBP-1	5'-ATCGCAGGGAGGGTCATTTG-3'	5'-TGGGGTCAAGAGGGTCAGAA-3'
mouse GRP-78	5'-CGATACTGGCCGAGACAACA-3'	5'-GGAGGAGACACGAAGCAGAC-3'
mouse GRP-94	5'-ACCGAAAAGGACTTGCGACT-3'	5'-AGCCTTCTCGGCTTTTACCC-3'
mouse cyclophilin	5'-CAGACGCCACTGTCGCTTT-3'	5'-TGTCTTTGGAACTTTGTCTGCAA-3'

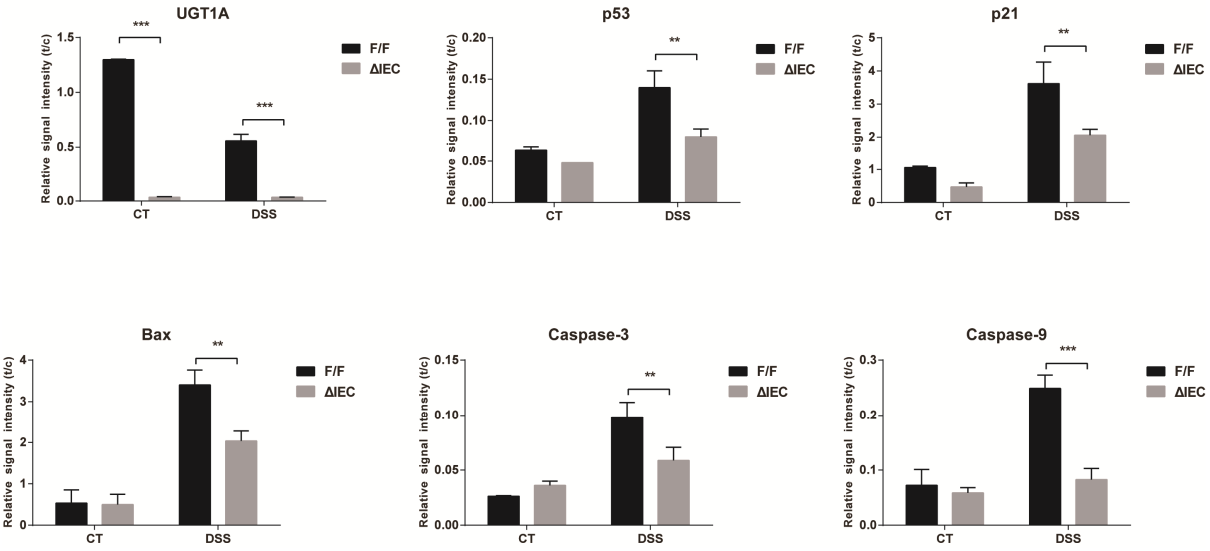
Supplement Figure 1A



Supplement Figure 1B

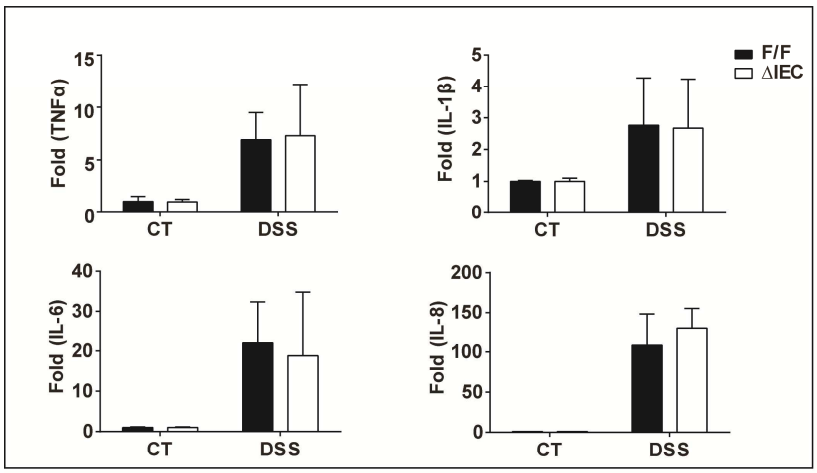


Supplemental Figure 2



Supplemental Figure 3

A



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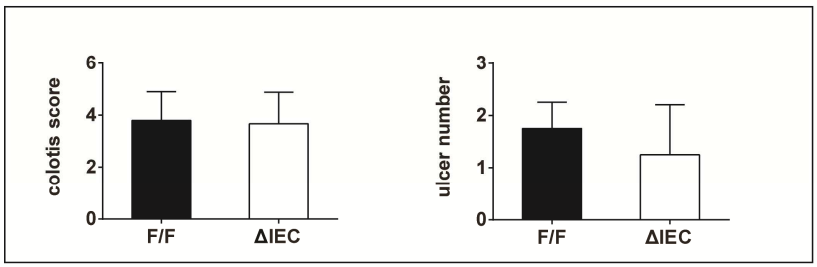

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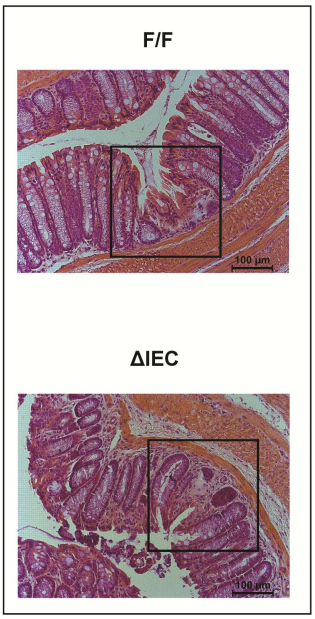
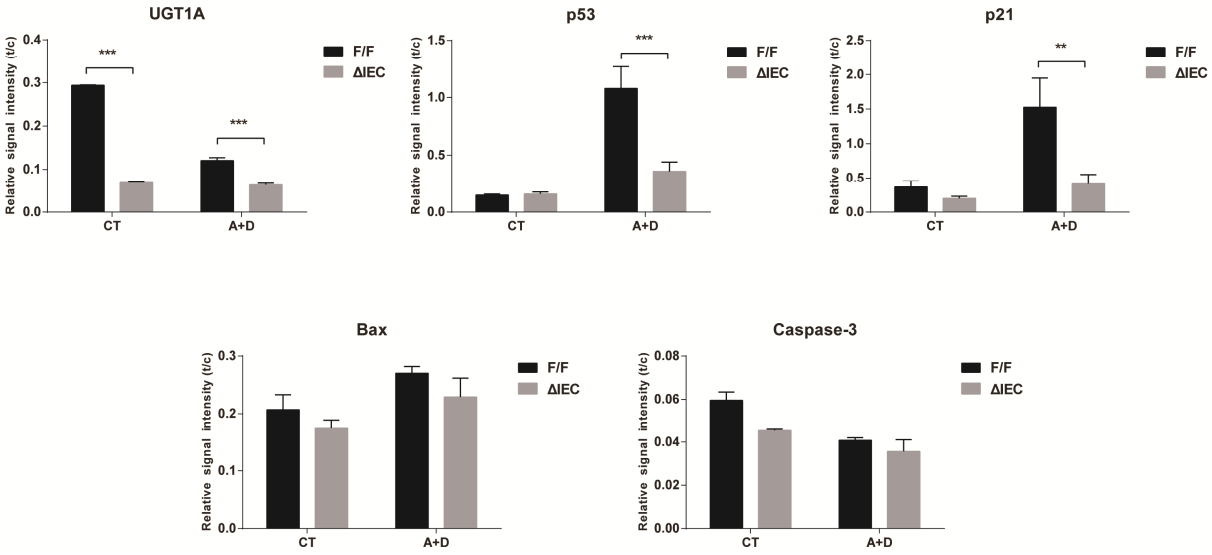
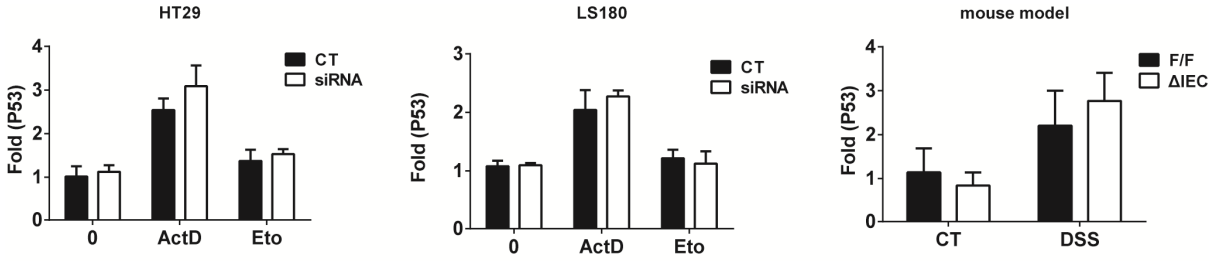


Supplemental Figure 4





Supplement Figure 5