

Supplemental Figures

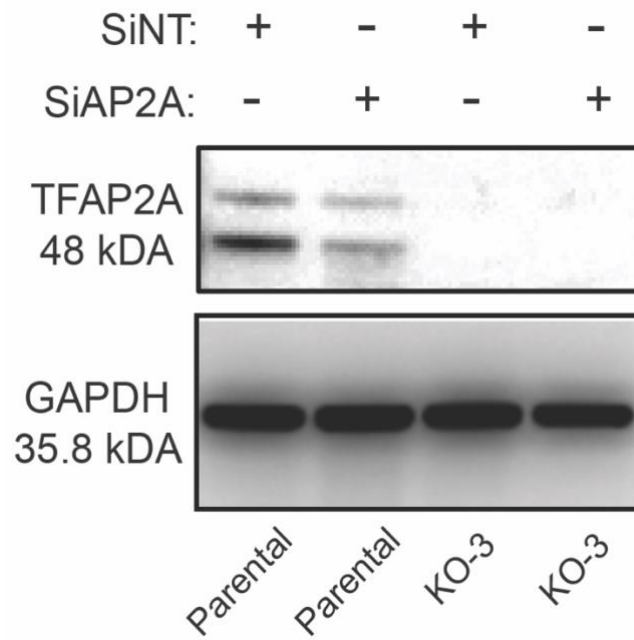


Figure S1. Confirmation of AP-2 α expression. In analysis of progression through the cell cycle in Figure 2A, transient knockdown of *TFAP2A* in HCT116 parental cells and complete knockout of *TFAP2A* in KO-3 are confirmed by appropriate changes in AP-2 α by western blot.

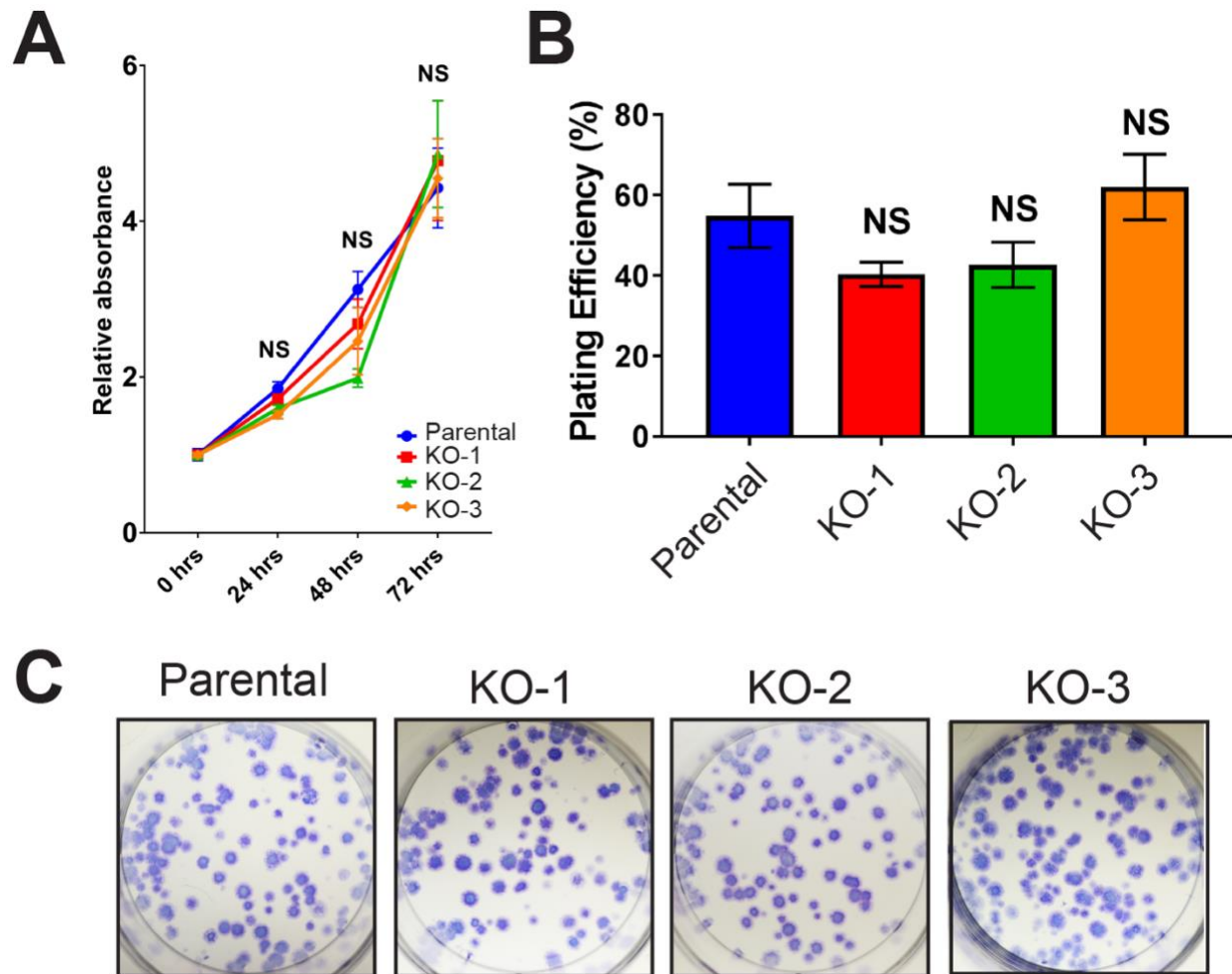


Figure S2. Comparative growth of parental and KO clones. A) No differences in baseline rate of growth were noted after knockout of AP-2 α compared to the parental colon cancer cell line HCT116. B & C) No alteration in clonogenicity was observed after loss of AP-2 α from the colon cancer line HCT116.

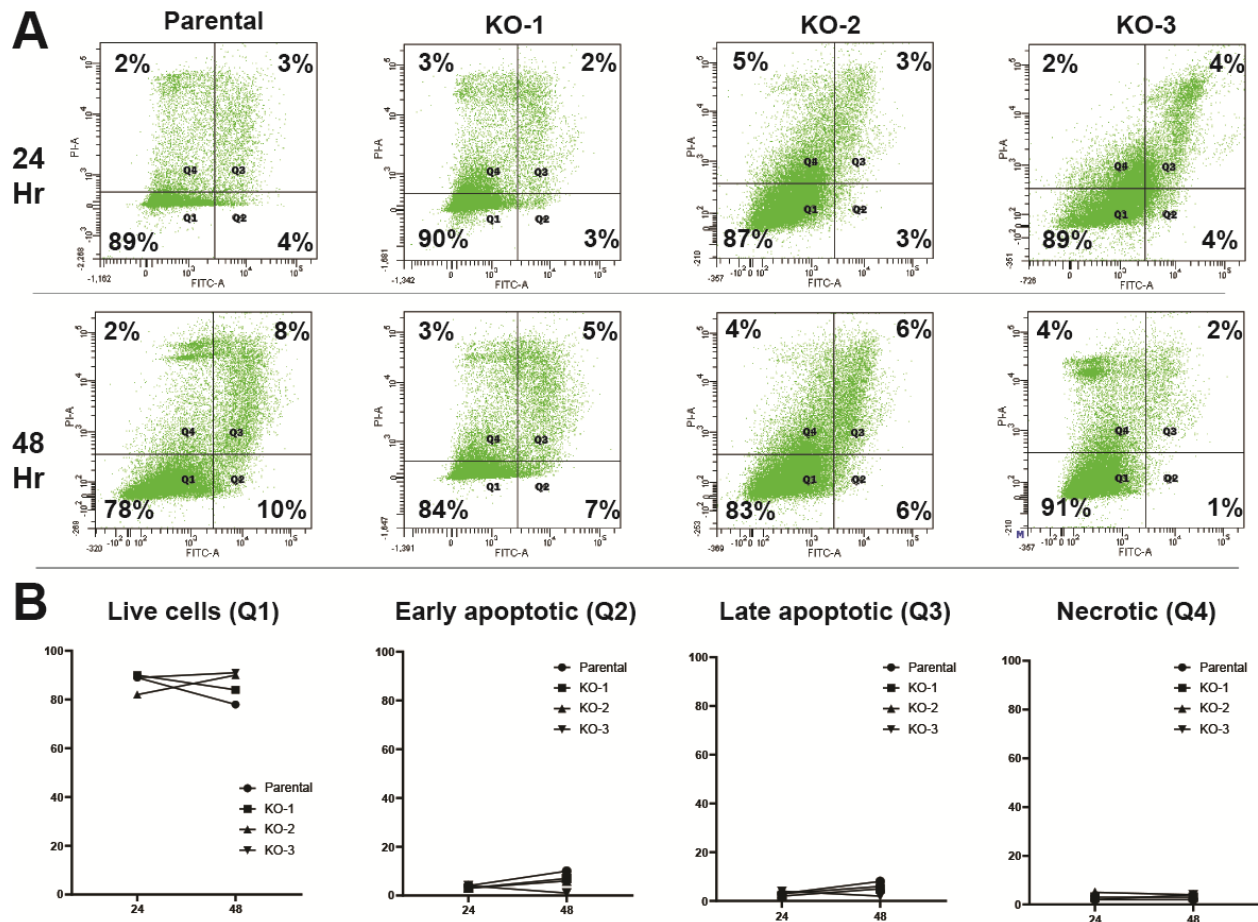


Figure S3. FACS Analysis of Apoptotic Cells with *TFAP2A* KO. Parental HCT116 and the three *TFAP2A* KO clones were serum starved, released from G₀, and apoptosis measured at 24 and 48 hours. **A.** Plots from FACS analysis. **B.** Quantitative plots for live cells, early apoptosis, late apoptosis, and necrotic cells show no differences between parental cells and KO clones.

AP-2 α consensus binding sequence (via GSE31477):



Peak 1—TGM2 TSS

```
>hg18_dna range=chr20:36226729-36227526
GAGGACACGTGCCAGTGGTCCGCCAGGACAGTACTTTACAGTTTACAACA
CCCCGTCGCGTTCCATTGCCTCACCTGATCCAGGGAGGCAAGGGTTAATG
GTTATGCAGTGTGGATGGGGAAACTGAGGCTCCAAGCAGCATTGAGACGC
CTCCTCACCCAGCCCGGTCTGCCTGTTGCTCTCCAATCAGGACTTAGGG
ATTACAGTCCCACCGGGTCTGACCCCAATGCCCGGGGGCCCTGAGTGC
GCGGCTGCGGTGACTCTGATACTCACCTCGGCCATGGTCGGGCGGGGGC
GGTGGCTCCTTCCACTGGCGGCGAGACCCTCCAAGTGCACCCTGGCGG
CTGGCACTGCCGAGGCGGAGAGCGGCGCTAACTTATAGCCCGCTTTGGGG
CGGGCCGGGGCGGGGCCCGCGGGAAGGCGGCGACCTGGGAGGCCACCC
ATTGCCCAGTCCCAGGGCCACGCGCCAGCGCTGGGGCTCACCCAGGGGA
CCGGAGCCCGAGGGAGGGACGGCGGCCGACGAGGGCGCCCCCTGGGGGA
GCGGACAGGGACACACAACACTAGCCAGGATACAGACACACCTGGACCCAC
AGACTCAGACCTTGAGAACAGACACCTGGACACACACACTCAGATACAG
ACACACGCAGCACCTCATAGAAACACACAACGGAACCGGGGTGCACCTG
GACACACAGATGTGGACTCTTAGGTGAGATCTGGGATCAAGAACACCTCC
CCACCCCAACACACACACACACACACACACACACACACACACACACACT
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Peak 2—Within TGM2

```
>hg18_dna range=chr20:36205573-36206089
CGTAATAAGGTAATCTGTGGGACTTTTGTCTTACTTTTAGTTTTGATTGA
AGTTGAGTTTTGGGAGTGGGGGAGAAGGGATGCGACCTTTGCCCTGGGGC
ACCATCGATAGGCCAGGGTAAGAGCTTACTGGTTGGCCCTGGATTCTCTGC
CAGGAGATTTGTAGGAGCTTCGAGGAAGGAGGAAGGAACAGCTATGACCT
CCCCCTCTTGCCCTGGTTTCTGTCCCCCTGAGGCCTGGGCAGGGCTCAGCC
CTAAGGCTGCCCTCAGTGAAGGCTGGTGTCTAACCACAGGTCTTATCCC
ACCATGCAGTGGGCCTGAGGACAGACCGGAGGACGGGGGAGGTCTGTCTC
TGCTTTCCAGGGAGCCAAGTGCCACTCTTGCCCCAGGGGTGGTGTCCCGG
GAGGCCTCCTCATCAGTCTAACAGGAGGCTGCCCCAGCACCGTGCACACC
TGGATCAGAGACTGACCTGCTGCTCACCAGCTGTATGACCTTGGGCAAG
CCTACTCCCCTCTCTGAG
```

Peak 3—following the stop of TGM2

```
>hg18_dna range=chr20:36188329-36188824
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GGCCTGTGCACCTGCCAGTGTGAGCAGCCCTGGCTGGAGCAGCCCTGCC
CCTGCTGTATAGCCGGGAGGCTGTTTCCAGGCTGGAAGCCAGAGTTGGCAG
CCCTTGTTGGGGCTGTGCCCTGACCCTGCCCTCAGGGTGCTCCGGAAGAA
GGGACAGGCACAGAACTGCTATTCTAATAAGGCTGCCGAGTATCCAG
TATCGTAAAGGTCTGGGGAGGTCAAGGCAGTTGGCTGCAGTCCAGGAAGG
CTTCACAAAGGAGGCCTCCTTGGGGCAGGGTTTTGCAGTTGAGTAAGAG
TTCATTAGGTAGAGAGGATAGTAAAAGTGTTTTTAGCACAGGGAATGGCA
ATAGGTCCCACTACTCCATCCTTGCCCTTGCTTACCCTCTCTGTATTTCC
AGGGGGCTGGAAGTTGGAAAATGACATTTTCCAGAGCTGCTTCCCA
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Figure S4. AP-2 α binding site. Consensus AP-2 α sequence is shown and AP-2 α binding sequences that correspond to sites of AP-2 α occupancy identified by ChIP-seq (highlighted).

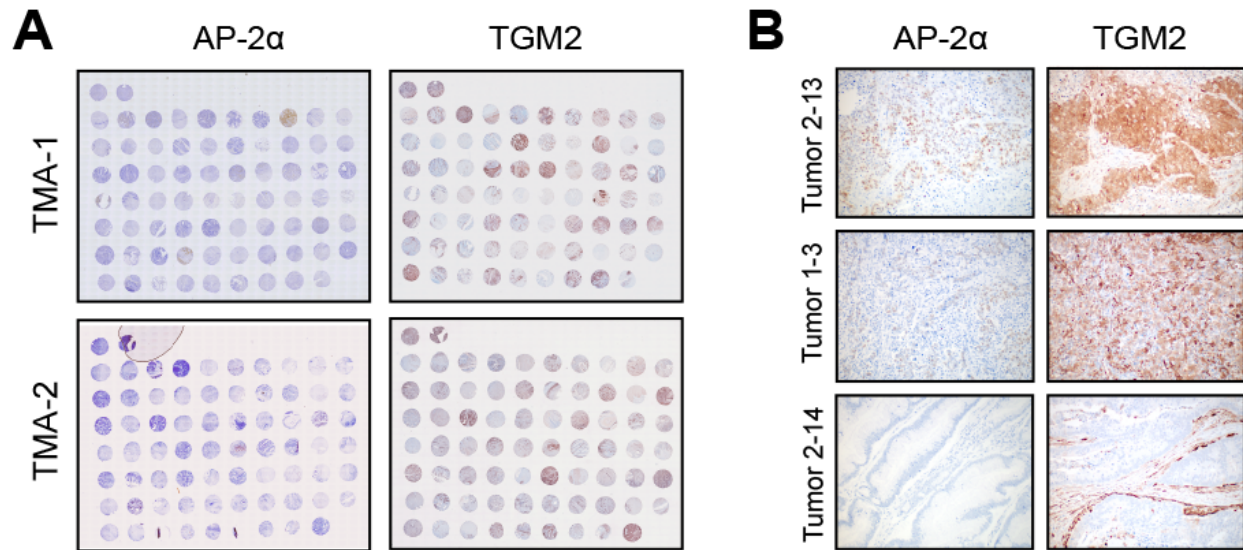


Figure S5. Colon cancer tissue microarray analysis (TMA). **A.** Two colon adenocarcinoma TMAs were analyzed by immunohistochemistry for expression of AP-2 α and TGM2. **B.** Examples of immunohistochemistry analysis for AP-2 α and TGM2 from three representative colon adenocarcinomas that show positive correlation between both proteins. Tumor 2-13 has high expression of both proteins, tumor 1-3 has moderate expression of each, and tumor 2-14 has expression of neither in tumor cells.

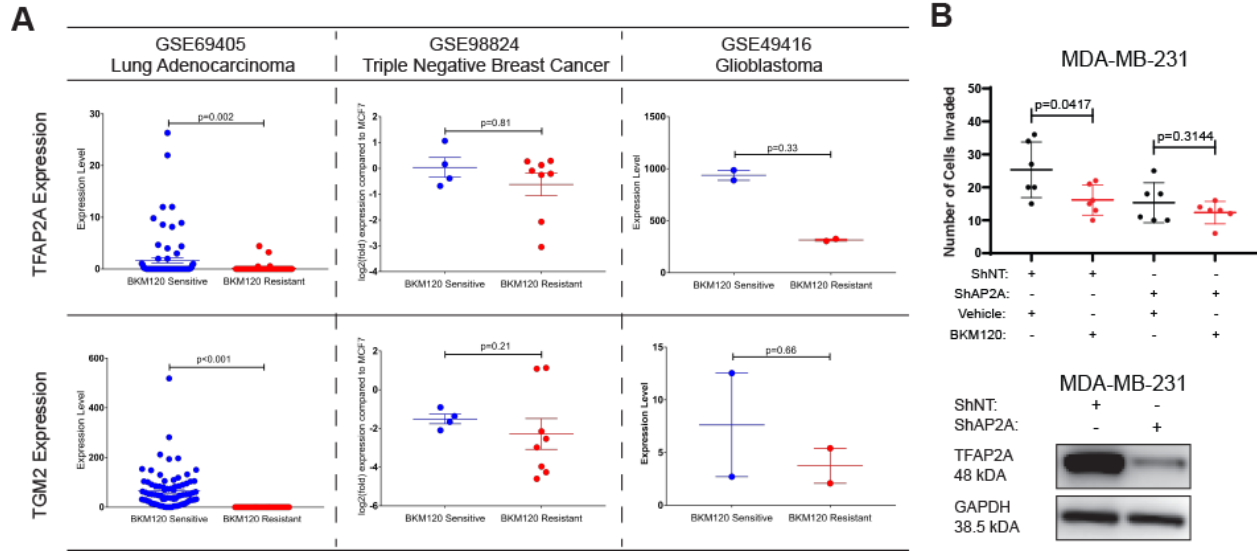


Figure S6. *TFAP2A* and *TGM2* Expression in Response to BKM120. **A.** GeoDatabases identifying BKM120 resistant cell lines demonstrated significantly lower *TFAP2A* and *TGM2* expression in BKM120 resistant lung adenocarcinoma cells and a trend towards lower expression in BKM120 resistant breast cancer and glioblastoma cells. **B.** MDA-MB-231 TNBC cells were transfected with shRNA for NT or *TFAP2A* and tested for response to BKM120 by invasion assay; response to BKM120 was abrogated by knockdown of *TFAP2A* (top); western blot confirmed knockdown of *TFAP2A* (bottom).