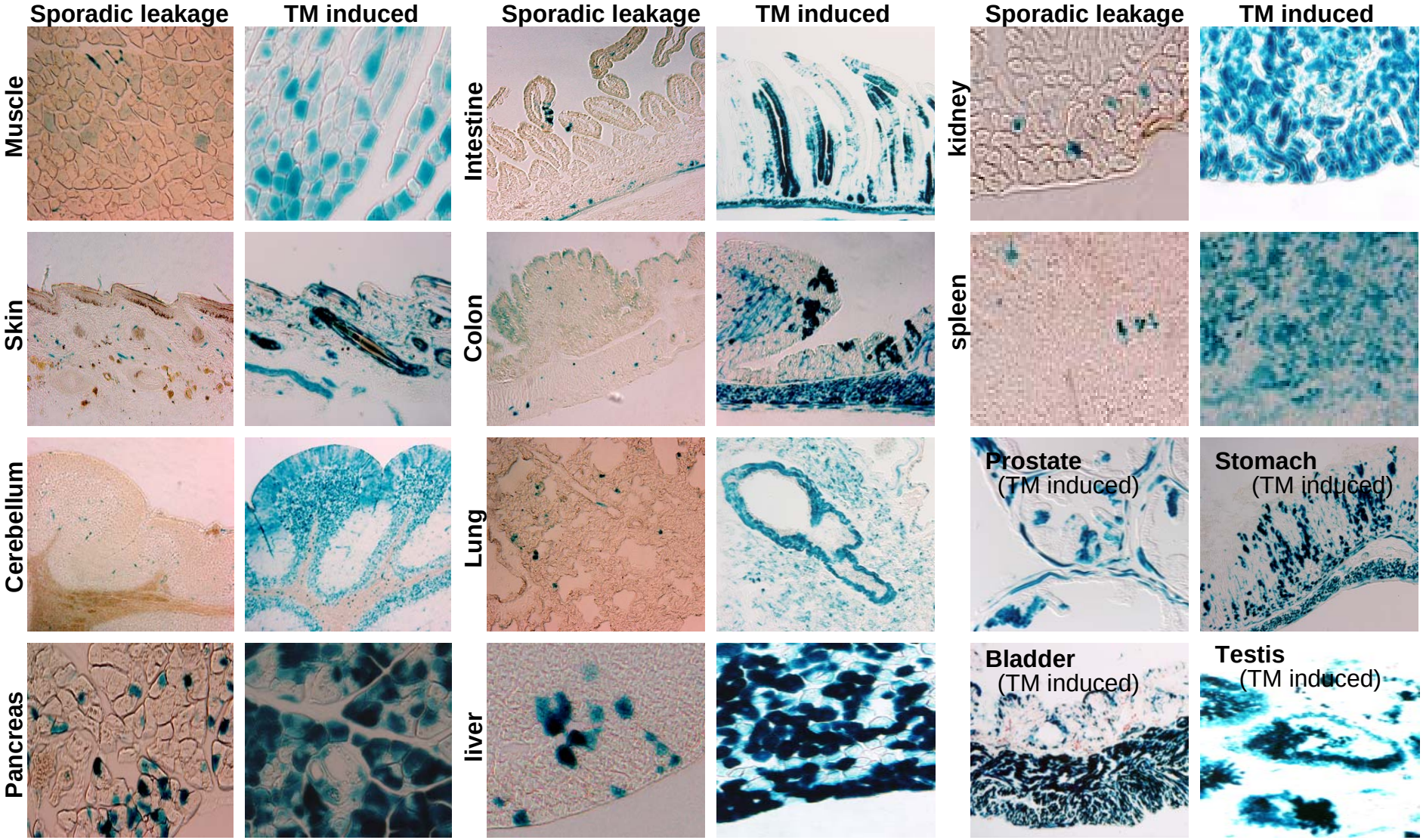
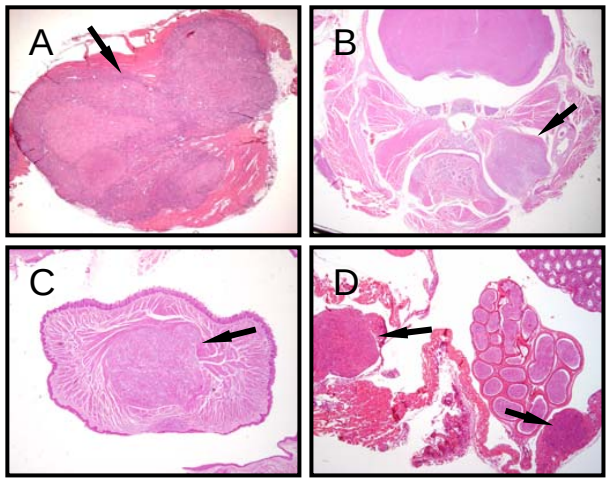
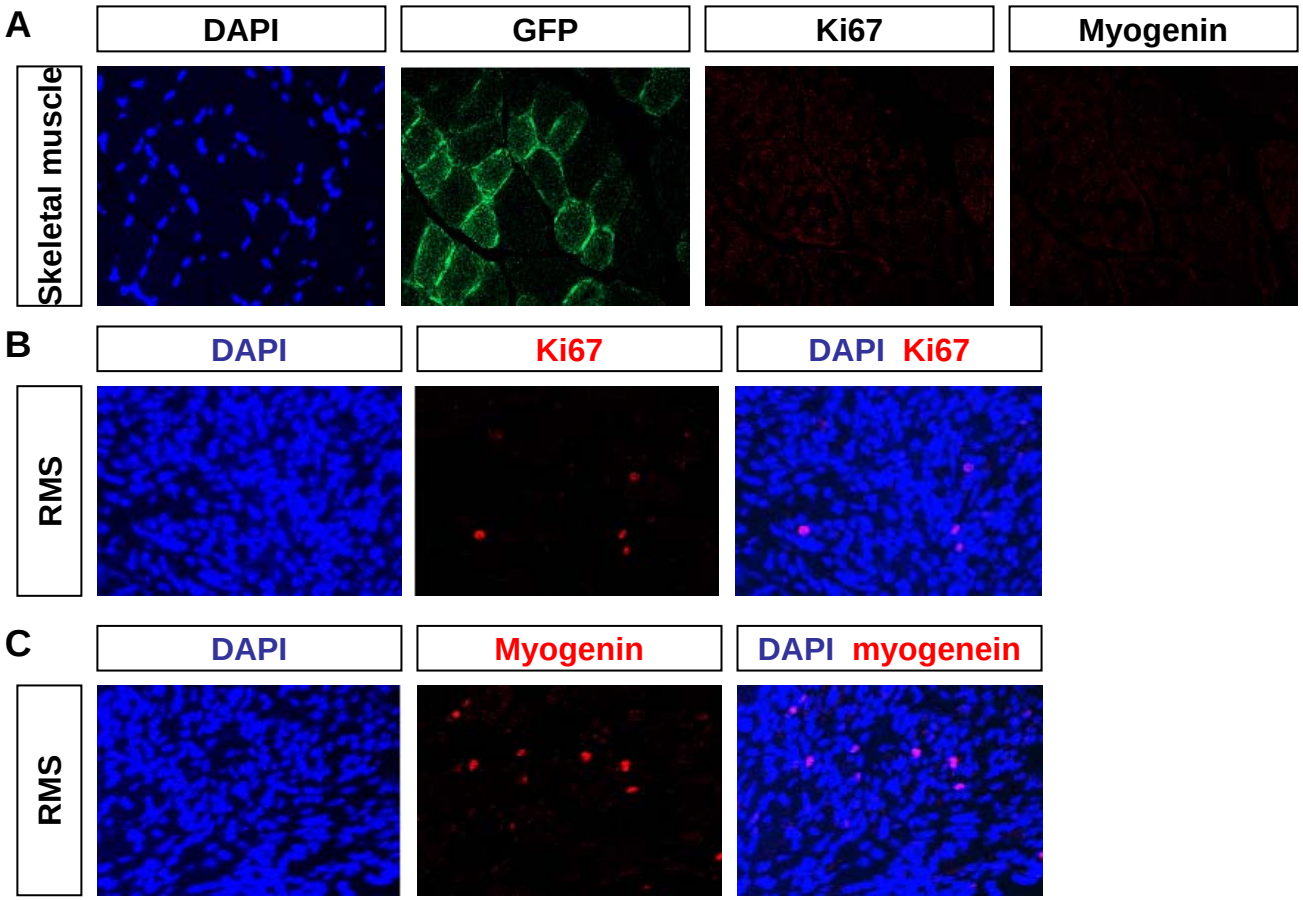


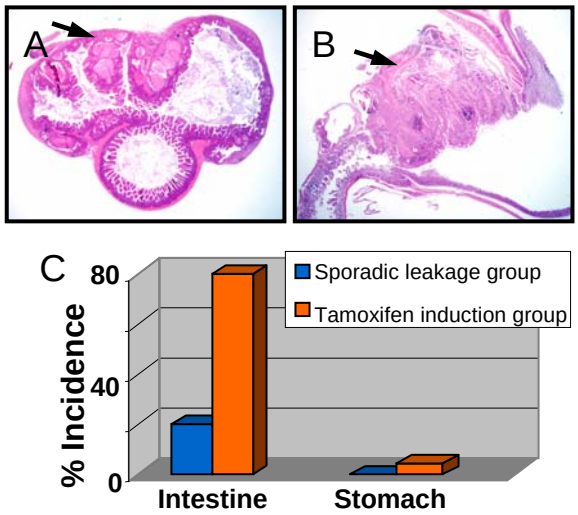
Supplementary Figure 1



Supplementary Figure 2



Supplementary figure 3



Supplementary figure 4

Supplementary Figure 1 Assessment of sporadic leakage and tamoxifen (TM) induced recombination postnatally in a variety of tissues in *CAGGS-CreER;R26R* mice at 2 months of age.

Sporadic leakage of CreER activity results in recombination in 0.1-0.2% of cells in most organs, while the pancreas demonstrates a significantly higher rate of approximate 5%. In mice receiving a postnatal TM injection, approximately 20% of cells underwent a recombination event in the epithelium of the small intestine, colon, stomach, bladder and prostate. Muscle, skin, cerebellum, lung and testis show approximately 30-40% recombination, the highest rates of recombination (60-70%) were observed in pancreas, spleen and kidney.

Supplementary Figure 2 Rhabdomyosarcoma formation following a postnatal day 10 tamoxifen injection into *CAGGS-CreER;R26-SmoM2* mice.

Rhabdomyosarcomas arising from the hindlimb (A), head (B), tongue (C) and para-testicular (D) regions (arrowed).

Supplementary figure 3 Skeletal muscle and rhabdomyosarcoma in a *CAGGS-CreER;R26-SmoM2* mouse following postnatal tamoxifen injection.

(A) Normal appearing skeletal muscle from hind limb of a *CAGGS-CreER;R26-SmoM2*mouse. GFP antibody staining shows SmoM2 expression in muscle cells. Immunostaining using anti-Ki67 and anti-myogenin antibodies shows Ki67 and myogenin positive cells were restricted to the rhabdomyosarcoma (A-C).

Supplementary figure 4 Diverticular harmartomatous lesions in the gastro-intestinal tract of *CAGGS-CreER; R26-SmoM2* mice.

Diverticular lesions (arrows) in the intestine (A) and stomach (B) Note the disorganized epithelium and increased proliferation in the diverticular regions. C) Penetrance of the gastro-intestinal lesions in *CAGGS-CreER; R26-SmoM2* mice with and without tamoxifen treatment.