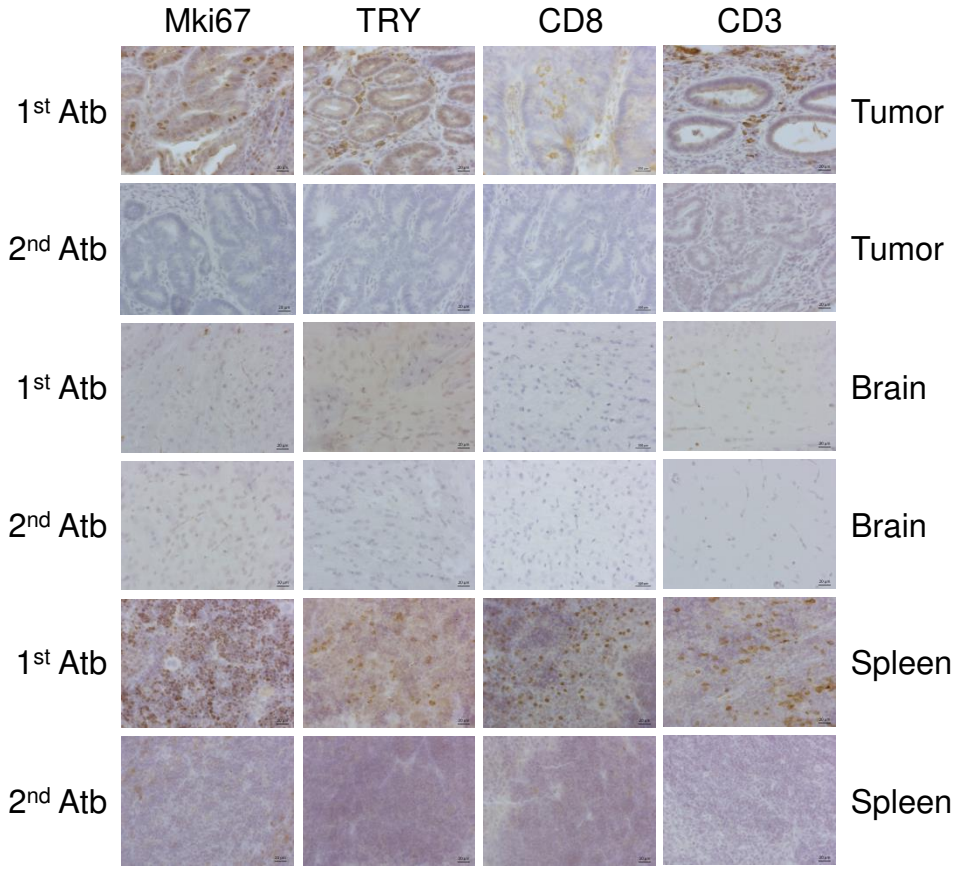
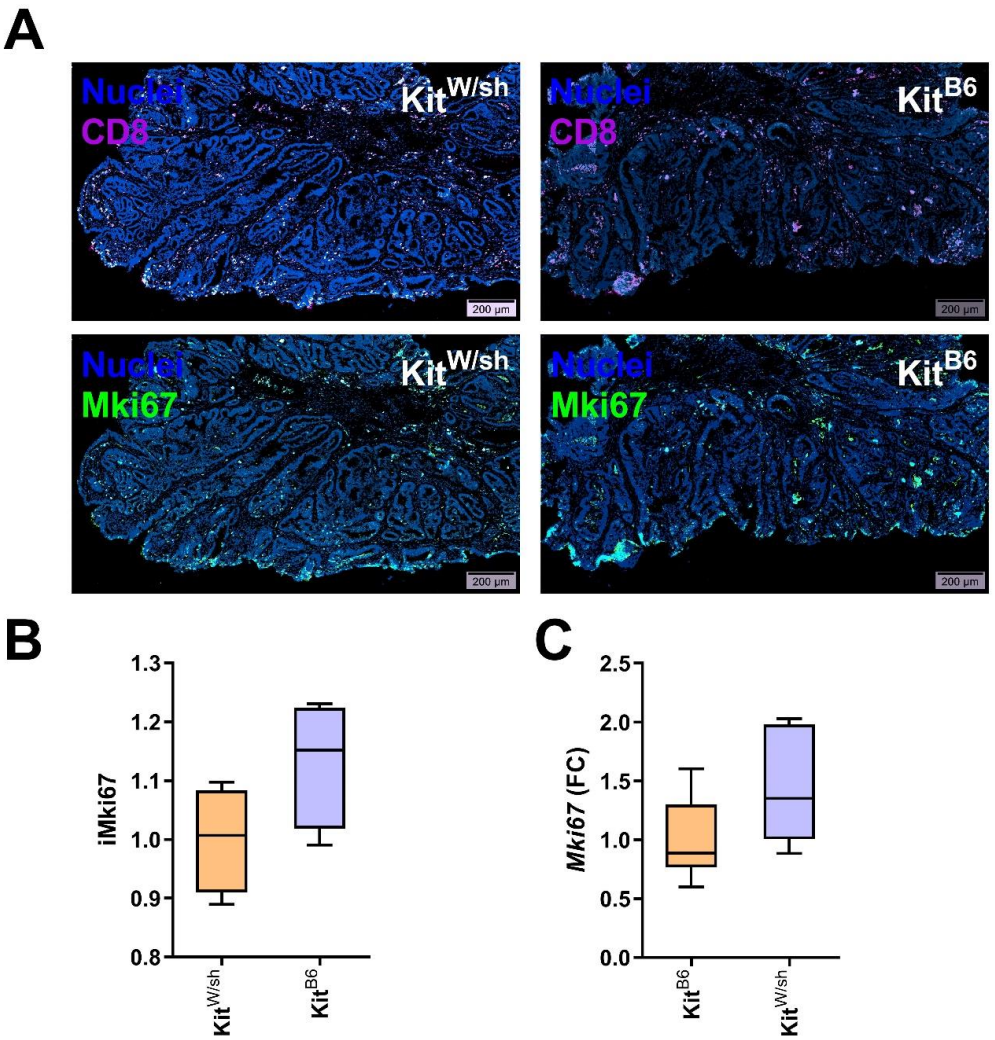
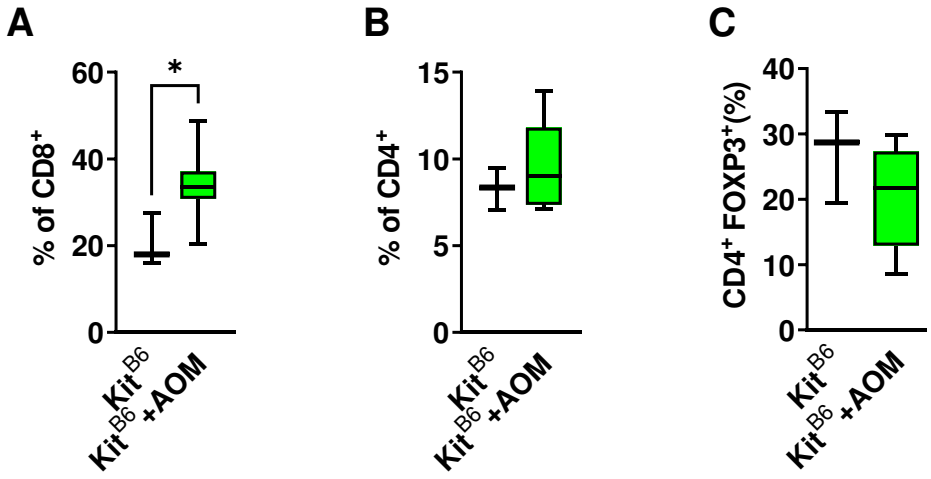
**Supplementary Figures**



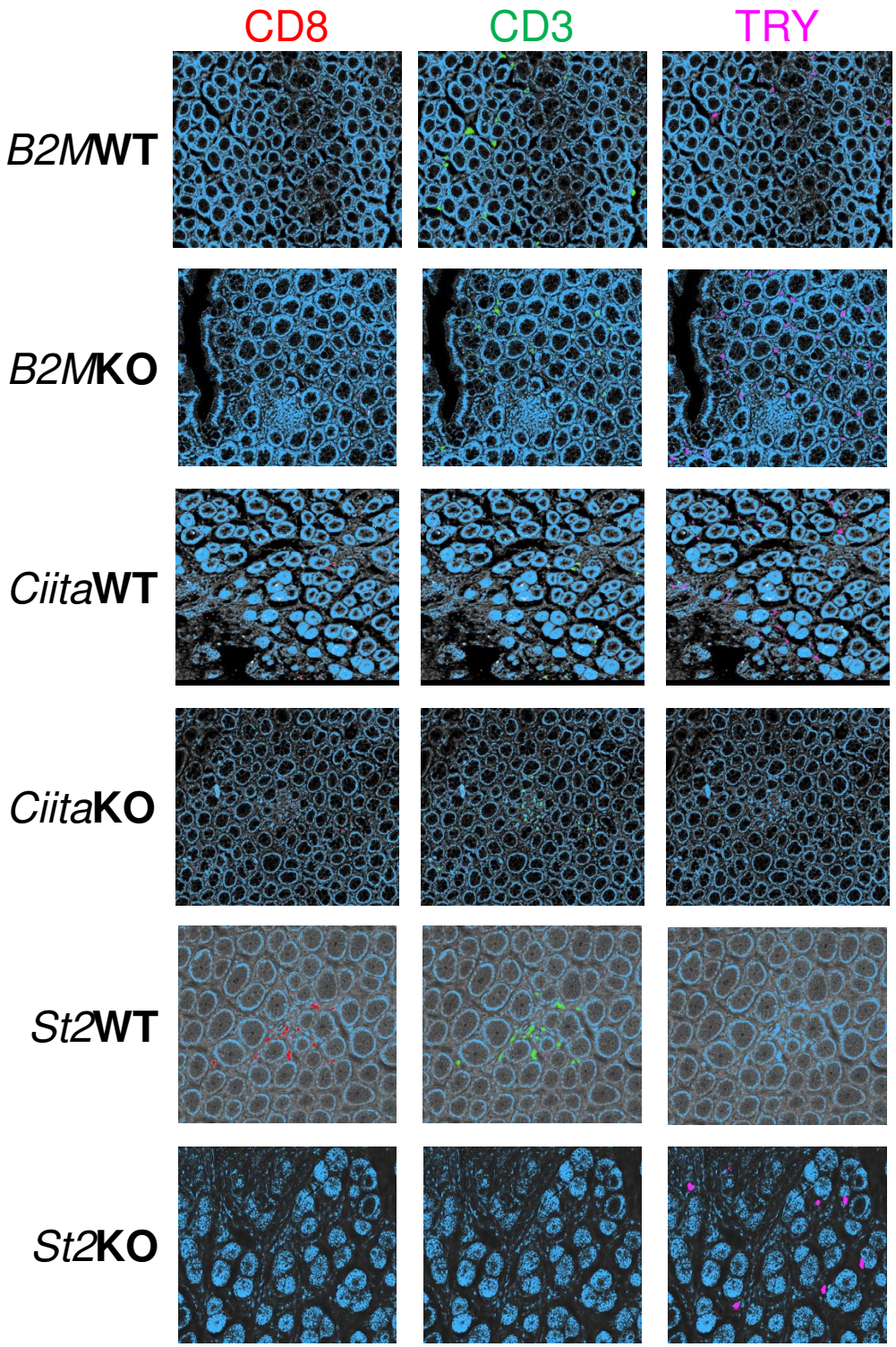

**Suppl. Fig. 1.** *Testing primary and secondary antibodies against positive and negative tissue samples.* To verify the working condition of our primary and secondary antibodies, we tested different antibodies (Suppl. Tab. 3) against samples from tumour (target tissue), spleen (positive control tissue), and brain (negative control tissue). Antibodies worked according to the manufacturer's guideline.



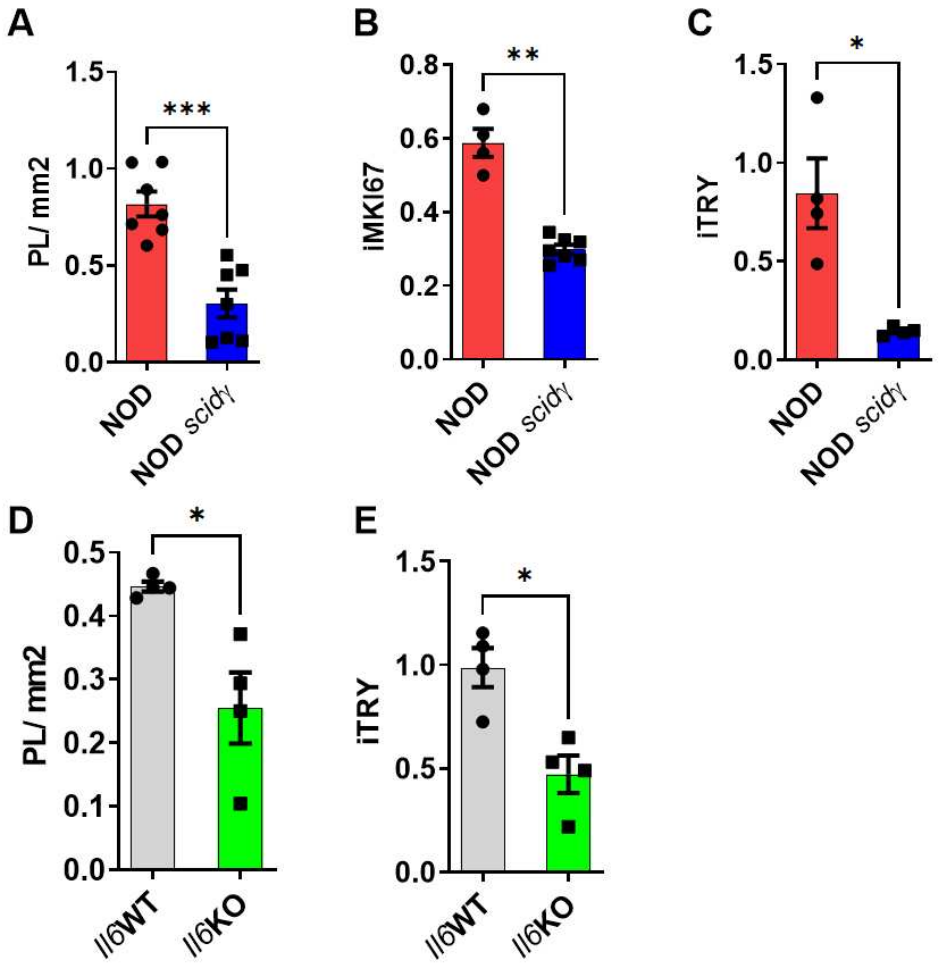

**Suppl. Fig. 2.** *Representative single images of multiplex IHC staining, and histopathological and gene expression analyses.*
(A) Representative single images of multiplex IHC staining with anti-CD8 and anti-Mki67 antibodies (magnification at 200 µm).
(B, C) Histopathological (n = 8) and gene expression (n = 12) analyses for Mki67 ($p > 0.05$). Data are shown as the median, highest and lowest values, along with upper and lower quartiles. *P*-values were calculated using a two-tailed Mann-Whitney test.



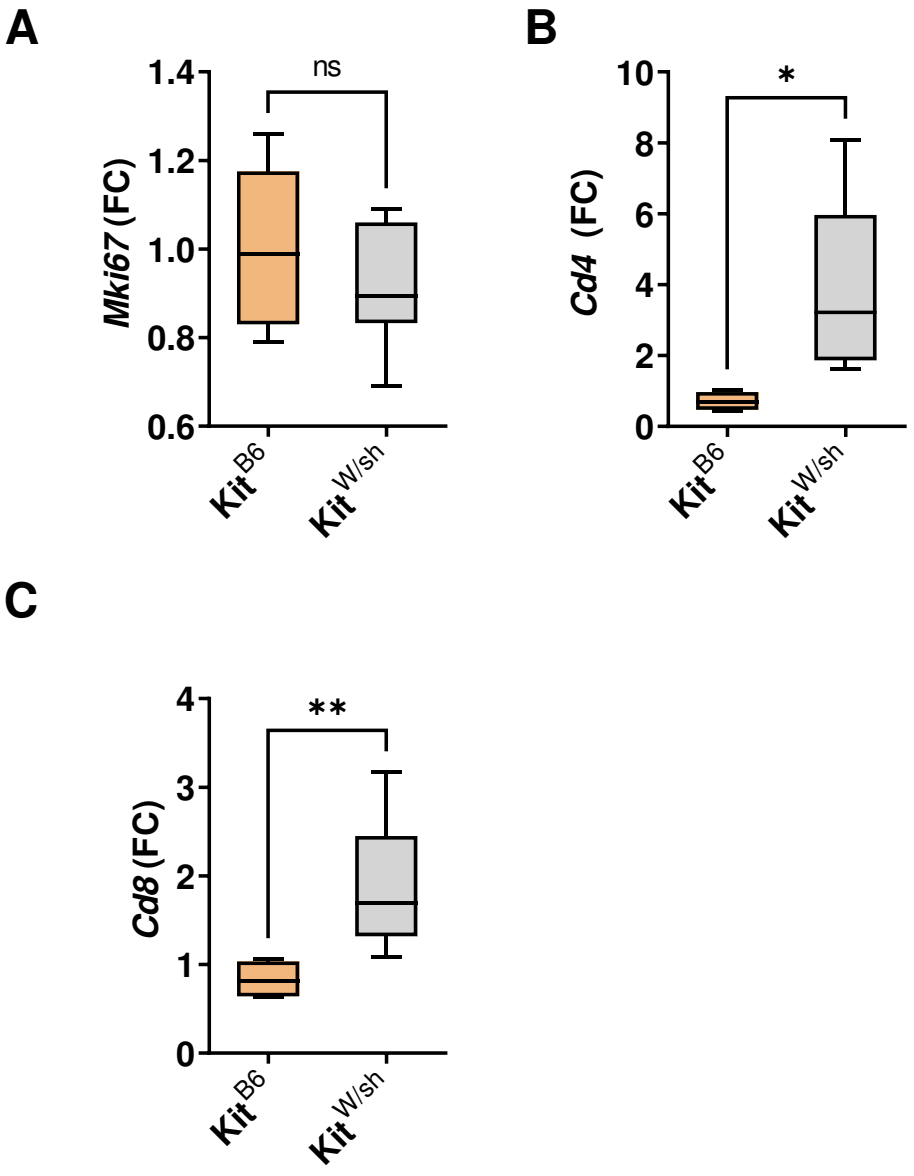

**Suppl. Fig. 3.** *Carcinogenic exposure alters CD8 T cell population in the colon.*
(A – C) Graphs show percentages of CD8+, CD4+, and CD4+FOXP3+ T cells isolated from colon samples (n = 10; *p =0.03). Data are shown as the median, highest and lowest values, along with upper and lower quartiles. *P*-values were calculated using a two-tailed Mann-Whitney test.



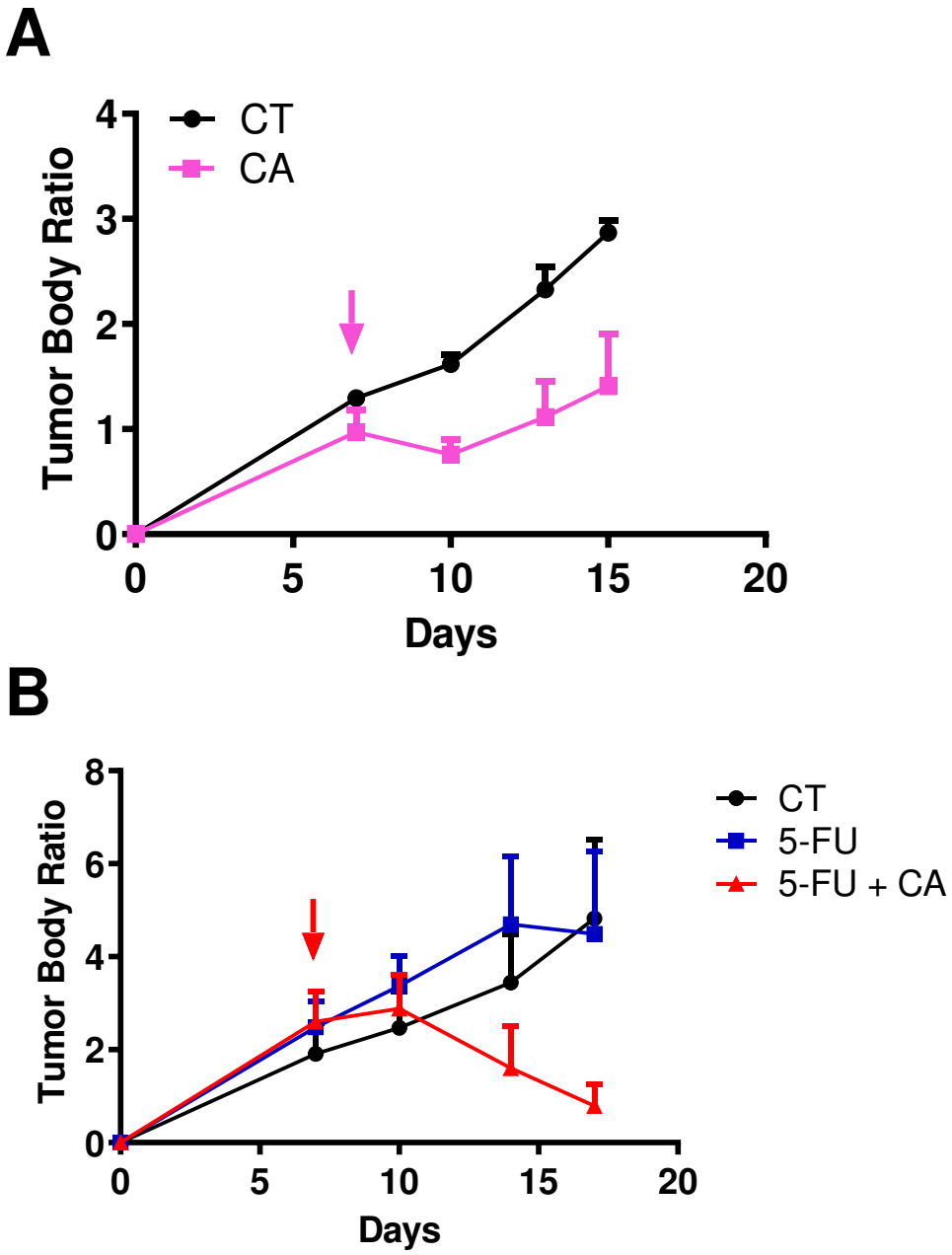

**Suppl. Fig. 4.** *Multiplex IHC staining*. Representative single images of multiplex IHC staining with anti-CD8, anti-CD3, and anti-TRY antibodies (magnification at 50 µm).



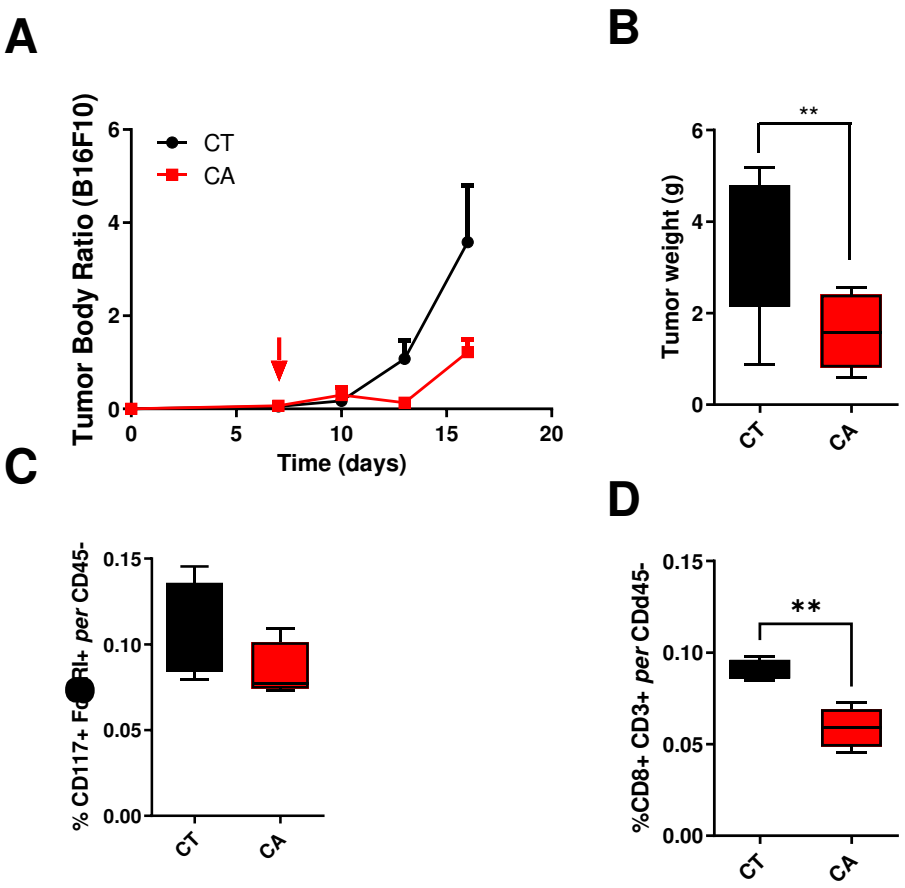

**Suppl. Fig. 5.** *Inflammatory response alters MC population and colon tumorigenesis since its early steps.*
(A – E) Histopathological analyses for single early tumorigenic lesions (A, n = 14, **p* =0.0006; D, n = 8, **p* =0.02), proliferation (B, n = 11, **p* =0.006), and MC numbers (C, n = 8, **p* =0.02; E, n = 8, **p* =0.02) in colonic samples from NOD *scidγ* and *Il6KO* mice and their counterparts. Data are shown as individual data points with mean ± SEM. p-values were calculated using a two-tailed Mann-Whitney test.




**Suppl. Fig. 6.** *The MC activity alter the immune response against CRC in mice.*
(A – C) Gene expression analysis for *Mki67* (n = 9; $p > 0.05$), *Cd4* (*$p = 0.01$), and *Cd8* (*$p = 0.009$). Data are shown as the median, highest and lowest values, along with upper and lower quartiles. *P*-values were calculated using a two-tailed Mann-Whitney test.

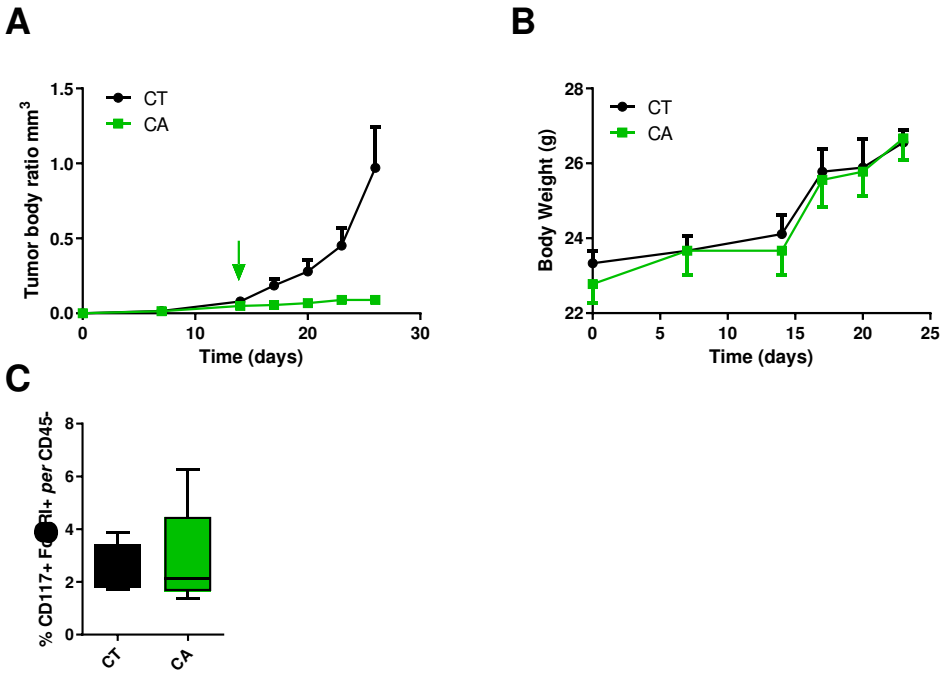



**Suppl. Fig. 7.** *The MC activity can be therapeutically targeted against CRC in mice.*
(A) Relative tumour growth between CA-treated (CA) and untreated (CT) mice for 15 days (n = 8).
(B) Relative tumour growth among untreated (CT), 5-FU-treated, and combined treatment of 5-FU and CA mice for 17 days (n = 15). Data are shown as mean ± SEM.




**Suppl. Fig. 8.** *The MC activity can be therapeutically targeted against melanoma in mice.* (A) Relative tumour growth between CA-treated (CA) and untreated (CT) mice for 15 days (n = 11). Data are shown as mean ± SEM.
(B) Tumour weight between untreated and treated mice for 15 days (n = 11; **p* =0.03).

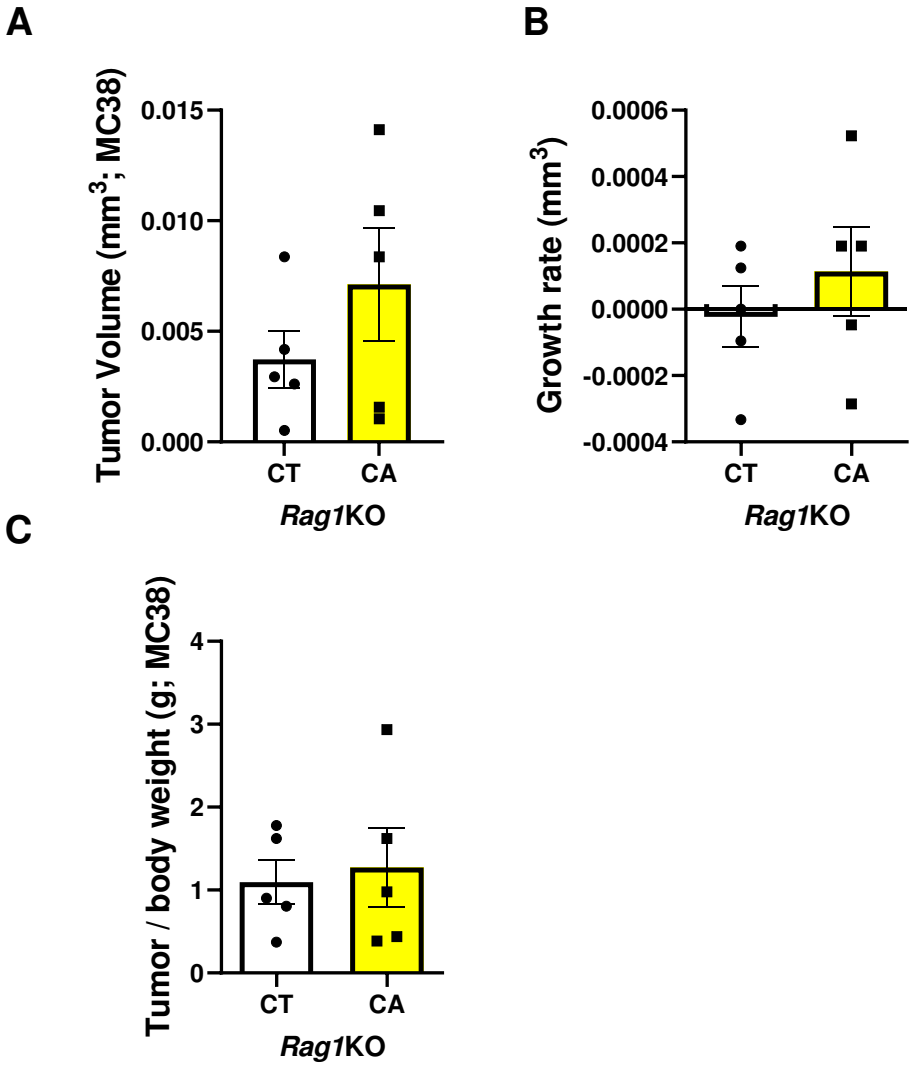
(C, D) Graphs show percentages of MCs ($CD45^+CD117^+Fc\varepsilon RI^+$) and $CD45^+CD8^+CD3^+$ T cells isolated from tumour samples (n = 8; **p* =0.002). Data are shown as the median, highest and lowest values, along with upper and lower quartiles. *P*-values were calculated using a two-tailed Mann-Whitney test.




**Suppl. Fig. 9.** *The MC activity can be therapeutically targeted against colorectal tumours in mice.*

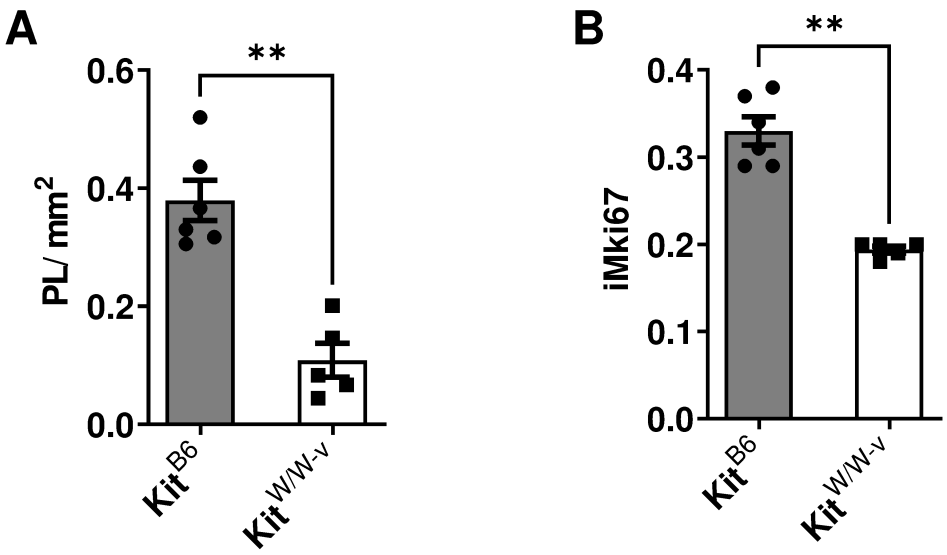
(A, B) Relative tumour growth and body weight between CA-treated (CA) and untreated (CT) mice for 15 days (n = 17). Data are shown as mean ± SEM.

(C) Graphs show percentages of MCs ($CD45^+CD117^+Fc\varepsilon RI^+$) isolated from tumour samples (n = 8). Data are shown as the median, highest and lowest values, along with upper and lower quartiles. *P*-values were calculated using a two-tailed Mann-Whitney test.




**Suppl. Fig. 10.** *The anticancer CA effects against colorectal tumours require T lymphocytes activity in mice.*

(A – C) Relative tumour growth in CA treated and untreated Rag1KO mice for 14 days (n = 10; $p > 0.05$). Data are shown as individual data points with mean ± SEM. p-values were calculated using two-tailed Mann Whitney's test.




**Suppl. Fig. 11.** *The MC activity alter colorectal tumorigenesis in mice.*
(A, B) Histopathological analyses for single early tumorigenic lesions (A, n = 11, **p* =0.004), and proliferation (B, n = 11, **p* =0.002) in colonic samples from $Kit^{W/W\text{-}v}$ mice and their counterparts. Data are shown as individual data points with mean ± SEM. p-values were calculated using a two-tailed Mann-Whitney test.