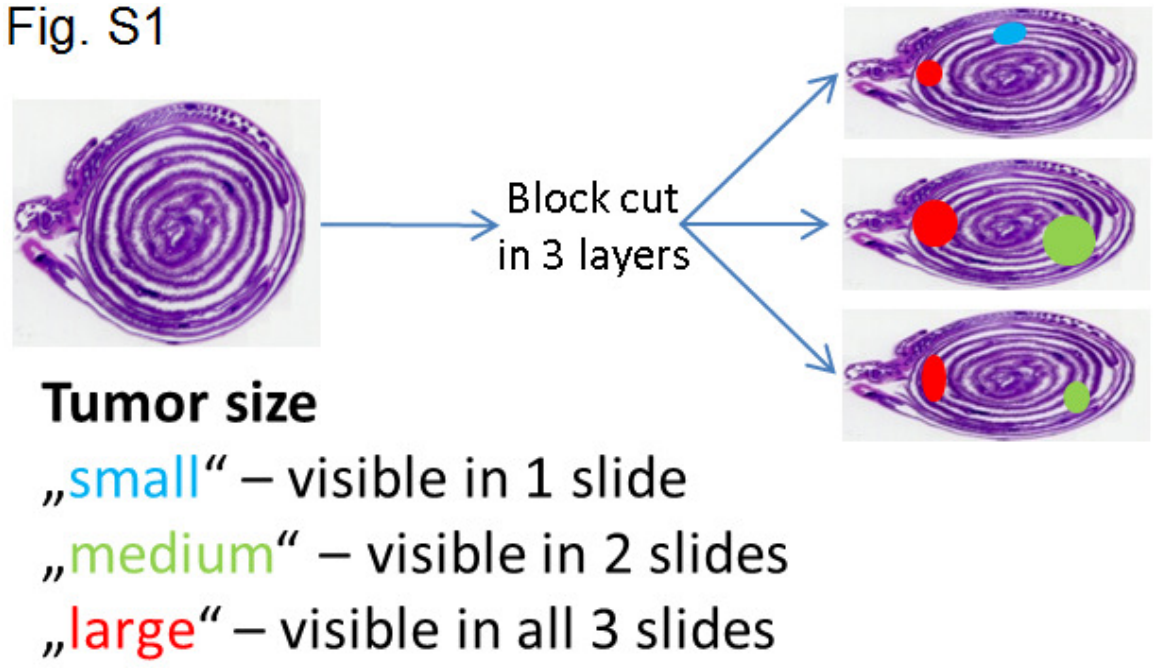
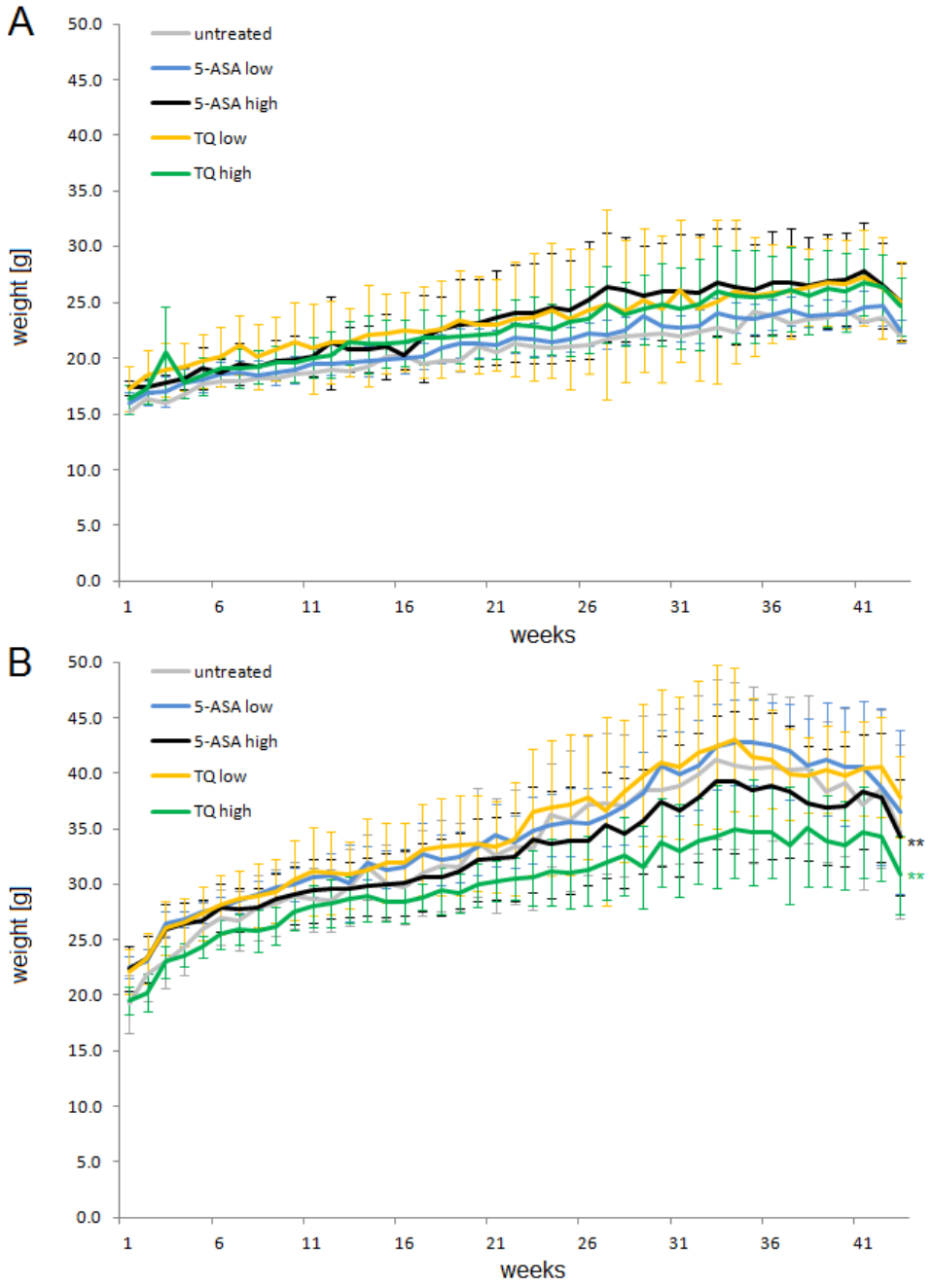
**Supplementary Figures**

**Supplementary Figure S1: Counting and sizing of tumours**. The paraffin block was cut in three layers and a tumour was rated in size according to the number of adjacent slides with presence of the same tumour (blue: small, yellow: medium, red: large).



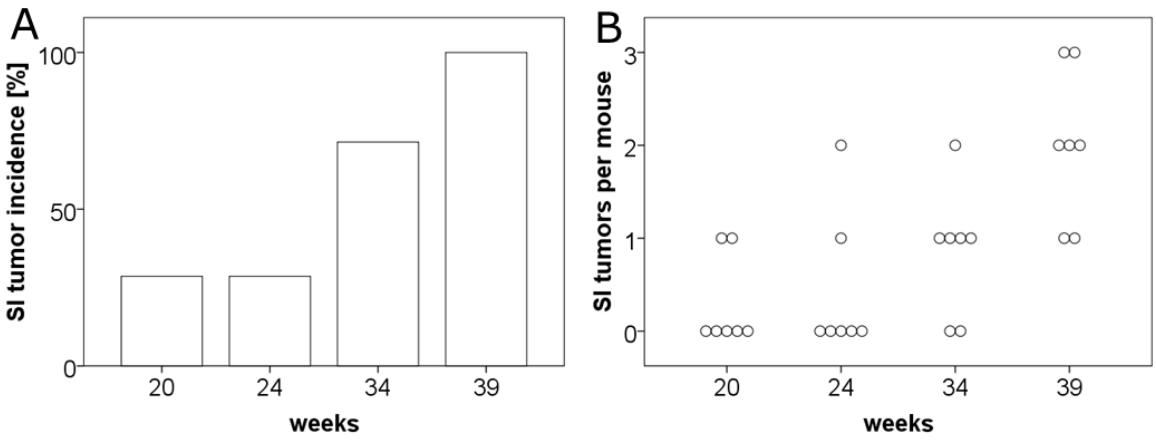
**Supplementary Figure S2: Body weight curves.** Body weight and standard deviation is blotted for each treatment group for female- *(A),* and male mice *(B)*. In the male population, the 5-ASA high (p=0.002) and the TQ high (p=0.007) groups gained significantly less weight compared to the untreated group.

Fig. S2



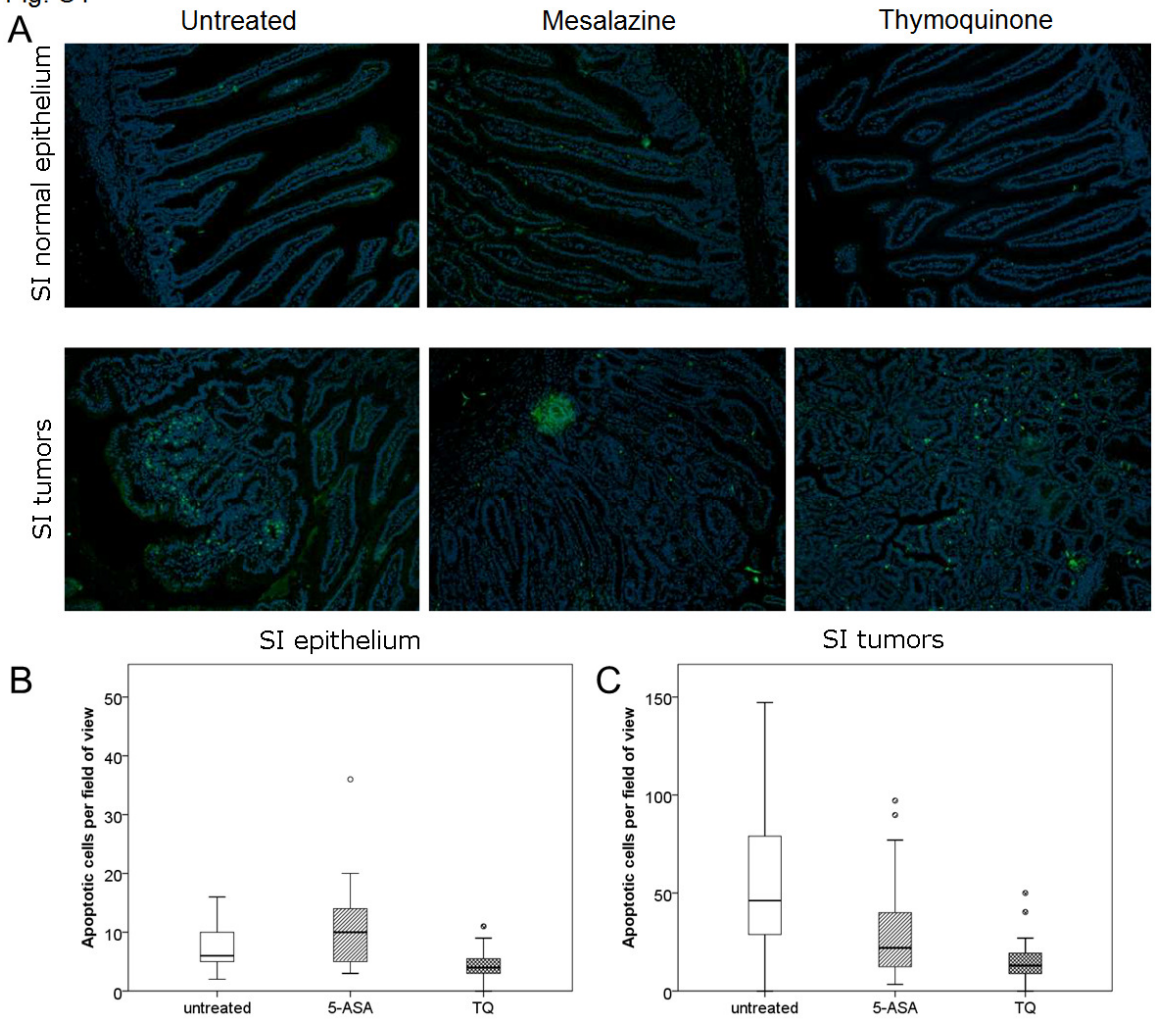
**Supplementary Figure S3: Tumour development over time.** 7 mice of the euthanasia control were terminated to assess tumour development after 20, 24, 34 and 39 weeks. *(A)* Tumour incidence increased over time and after 39 weeks all mice examined showed at least one tumour. *(B)* Tumour multiplicity increased in mean from 0.29 to 2 tumours per mouse between 20 and 39 treatment weeks.

Fig. S3

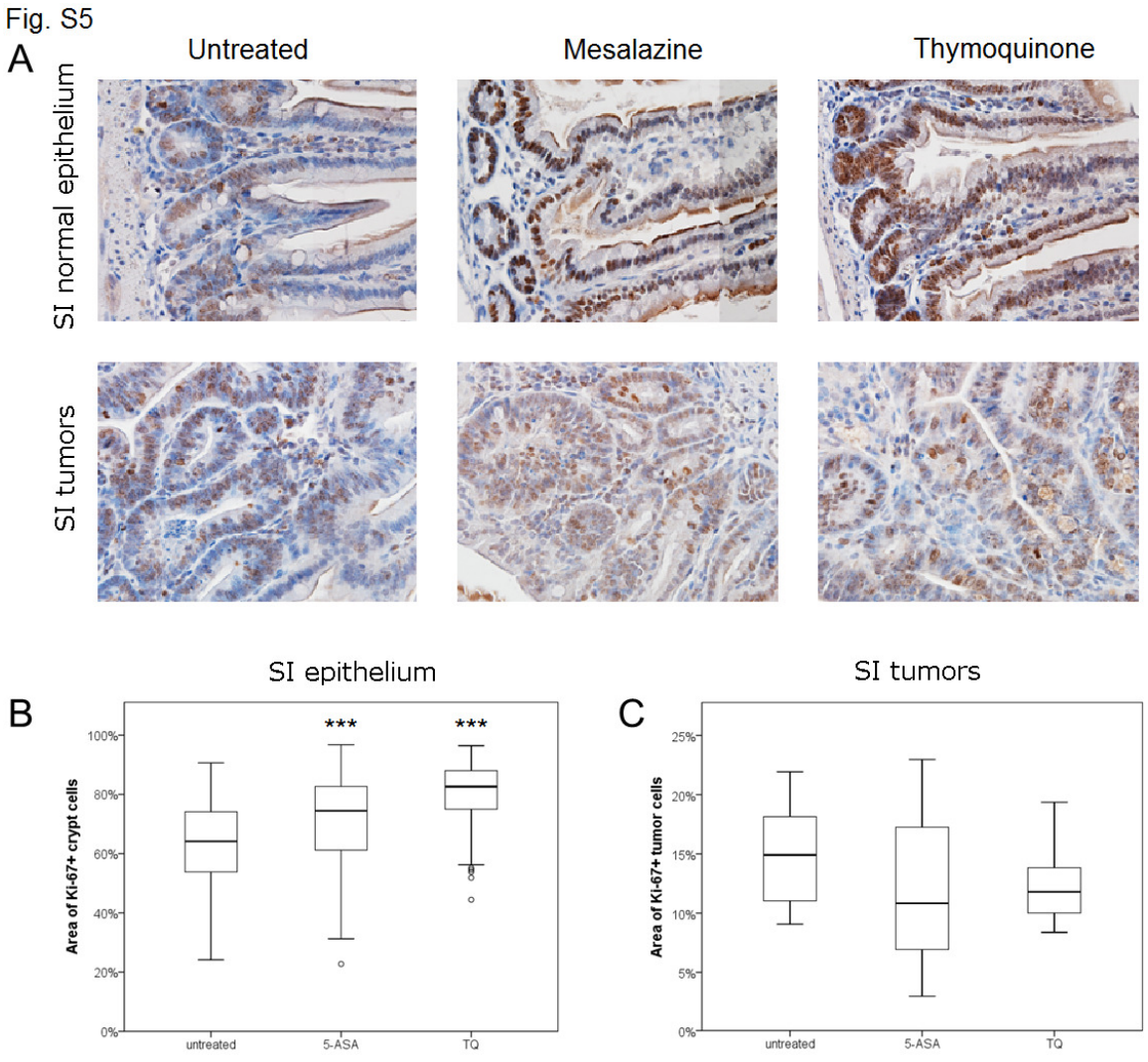



**Supplementary Figure S4: Induction of apoptosis.** *(A)* TUNEL-assay was performed on Msh2-deficient small intestinal (SI) epithelium (upper row) and tumour in untreated (left), mesalazine (middle) and thymoquinone treated mice (right). The number of apoptotic cells was quantified per field of view (ACpF). No significant effect on apoptosis was detectable in either treatment group both in SI epithelium *(B)* and tumours *(C)*.

Fig. S4


A
Untreated
Mesalazine
Thymoquinone
SI normal epithelium
SI tumors
B
SI epithelium
Apoptotic cells per field of view
0
10
20
30
40
50
untreated
5-ASA
TQ
C
SI tumors
Apoptotic cells per field of view
0
50
100
150
untreated
5-ASA
TQ

**Supplementary Figure S5: Induction of proliferation.** *(A)* IHC was performed for the nuclear proliferation marker KI-67. While treatment with mesalazine and thymoquinone significantly increased percentage of KI-67–positive cells per crypt in the small intestine, neither treatment affected counts of KI-67-positive cells in tumours. Boxplots display percentages of KI-67-positive crypt cells in SI epithelium for each treatment group *(B)* and KI-67-positive cells in tumours pooled for the respective substance *(C)*.



**Supplementary Figure S6: Mesalazine and thymoquinone reduce the number of small and medium sized tumours.** Tumours of the small intestine were grouped according to size into small *(A)*, medium-sized *(B),* large adenomas *(C)* and carcinomas *(D)*. The chemopreventive effect of mesalazine and thymoquinone was mainly observed for small and medium-sized tumours.

Fig. S6