**Supplementary Figure Legends**

**Supplementary Figure 1.**  Representative photographs of the whole intestine by Swiss rolls of *ApcΔ716* mice (*A*) and *ApcΔ716* *Tgfbr2ΔIEC* compound mice (*B*). Closed arrowheads indicate non-invasive benign adenomas, while yellow arrowheads indicate invasive

adenocarcinomas. Bars, 2 mm.

**Supplementary Figure 2.**  The expression levels of the indicated factors in stromal cells (closed bars) relative to the levels in the tumor epithelial cells (gray bars) of *ApcΔ716* mouse polyps. Stroma (1.69 mm2) and epithelia (1.68 mm2) were separately collected from frozen sections of four independent intestinal polyps using a laser microdissection system (Leica LMD 7000), combined, and were used for real-time RT-PCR. The E-cadherin expression was examined to confirm the epithelial cell preparation.

**Supplementary Figure 3.**  (A) Confirmation of the deletion of exon2 of *Tgfbr2* in the Tmx-treated *Tgfbr2flox/flox* (*Tgfbr2ΔIEC*) mouse intestine (*Tmx*). *Cont*, *Tgfbr2flox/flox* mice; *Ta*, tail; *SI*, small intestine; *Co*, colon. (B) The histological (H&E staining) and immunohistochemical findings of Ki67 in the small intestine (*top*) and colon (*bottom*) of control *Tgfbr2flox/flox* mice (*left*) and *Tgfbr2ΔIEC* mice (*right*). Note that TGFβ signaling suppression did not cause any alterations in the cell morphology or proliferation.

**Supplementary Figure 4.**  The histological changes (H&E) and immunohistochemical staining for Ki67 of the small intestines of X-ray-irradiated wild-type mice (*left*) and *Tgfbr2ΔIEC* mice (*right*). Day 0 was the day of irradiation. Bars, 100 μm

**Supplementary Figure 5.**  (A) Representative photographs of half of the whole intestine by the Swiss roll on day 6 after X-ray irradiation of wild-type mice (*left*) and *Tgfbr2ΔIEC* mice (*right*). Note that the regeneration of the crypt-villous structure was impaired in the *Tgfbr2ΔIEC* mouse intestine. Bars, 2 mm. (B) Representative photographs of X-ray-irradiated wild-type (*top*) and *Tgfbr2ΔIEC* (*bottom*) mouse colons six days post-irradiation. The results of the H&E staining, fluorescence immunostaining for E-cadherin (*red*) and Ki67 (*green*), and immunohistochemical staining for CD44 (*left* to *right*) are shown. White arrowheads indicate Ki67-positive cells. Closed arrowheads indicate CD44-positive epithelial cells. Bars, 200 μm (*left*) and 100 μm (*center* and *right*).

**Supplementary Figure 6.**  The gene expression of MT1-MMP, CXCL2, CCL2 and CCL3 in normal colon and inflammatory bowel disease tissue samples. The expression profiles of ulcerative colitis (UC, *top*) and Crohn’s disease (CD, *bottom*) were obtained from the NCBI Gene Expression Omnibus (GEO) database, as GDS3268 and GSE20881, respectively. The bars indicate the means ± s.d. Asterisks indicate *P* < 0.05.