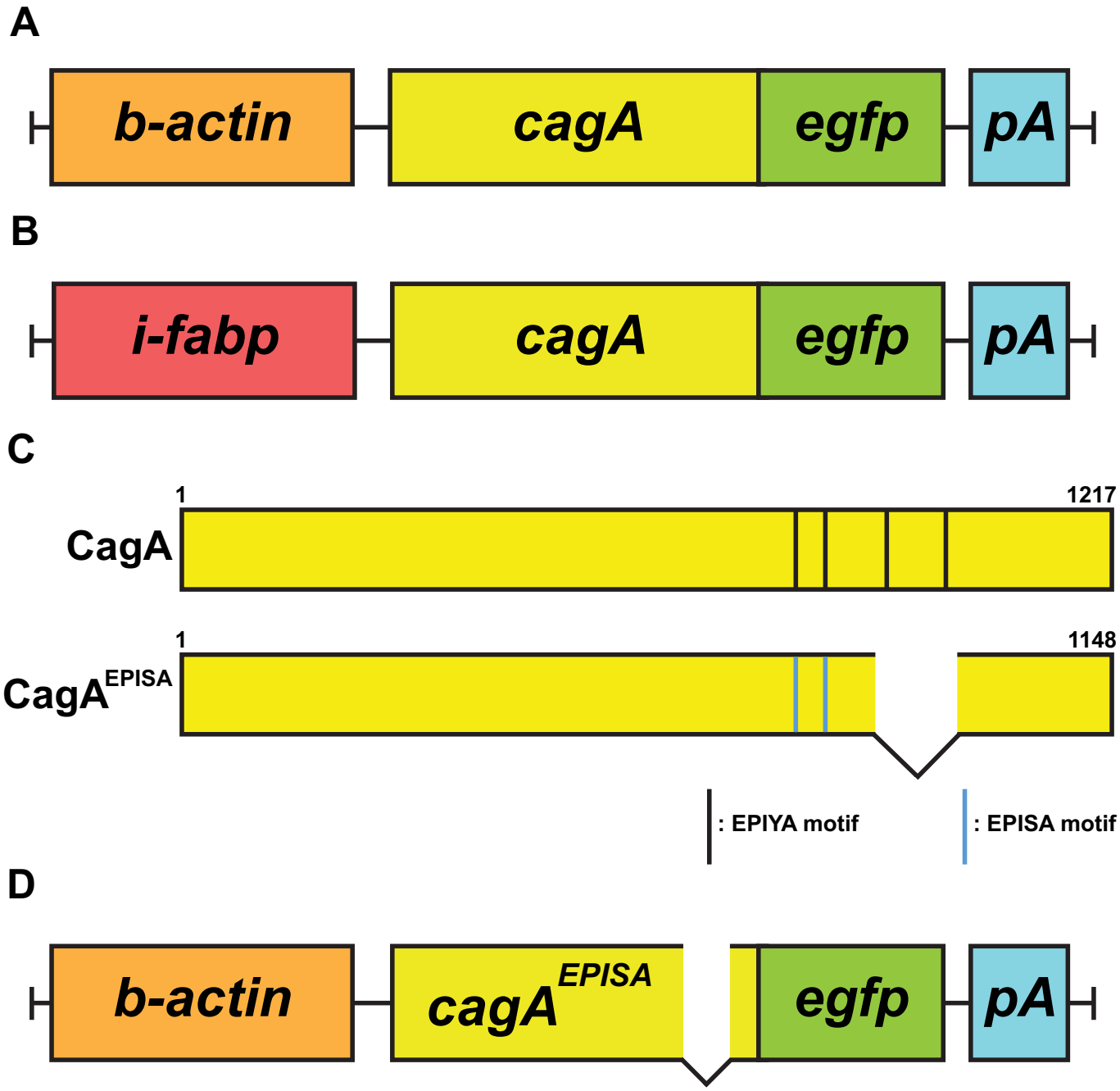

Fig. S1. Transgenic constructs. (A) The *cagA:egfp* fusion cassette was cloned downstream of the 5.3kb *b-actin* promoter fragment. (B) The *cagA:egfp* fusion cassette was cloned downstream of the 1.6kb *i-fabp* promoter fragment. (C) The phosphorylation resistant *cagA*^{EPISA} allele lacks EPIYA motifs for phosphorylation by Src family kinases. (D) The *cagA*^{EPISA}*:egfp* fusion cassette was cloned downstream of the 5.3kb *b-actin* promoter fragment.

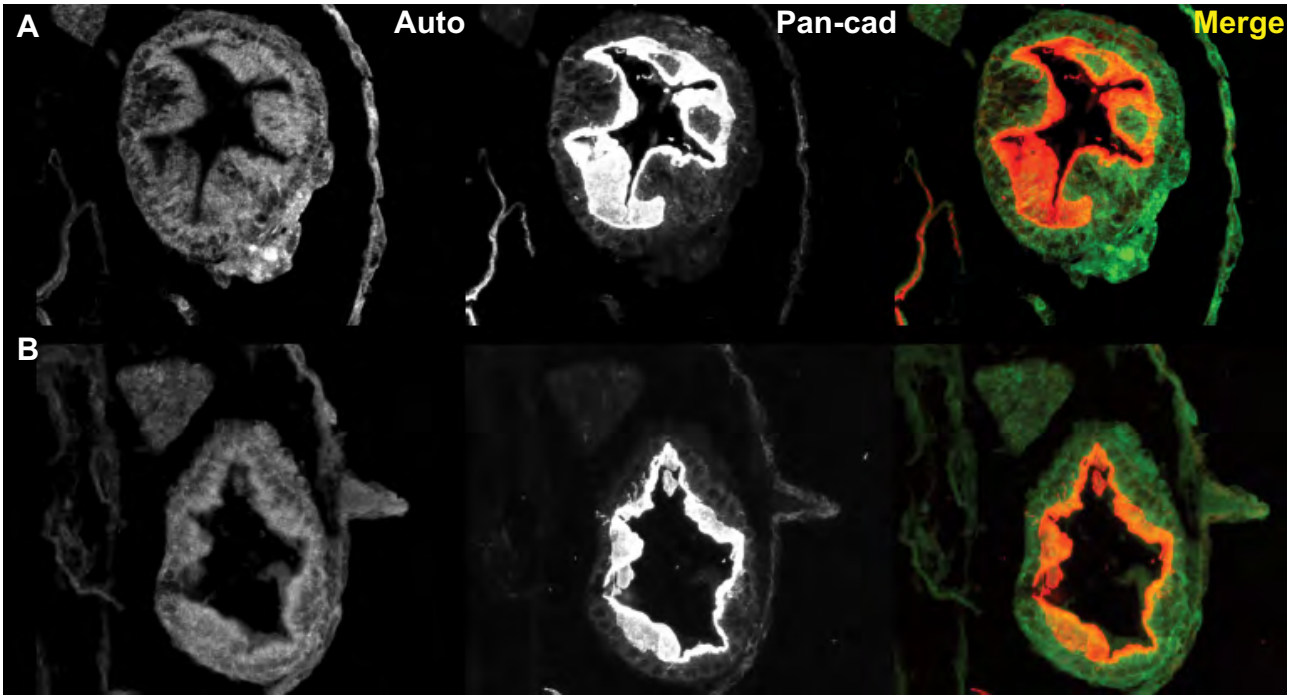

Fig. S2. CagA expression does not disrupt early intestinal morphology or cell polarity. Fluorescence micrograph of intestinal cross-sections of wild-type (A) and b-cagA (B) animals at 6 dpf showing green autofluorescence or staining with a pan-cadherin antibody.

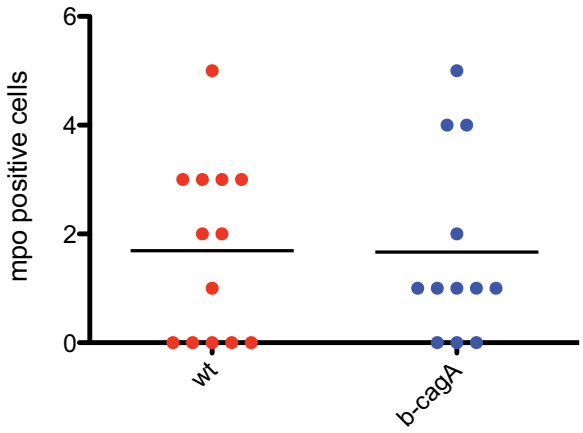

Fig. S3. CagA expression does not result in increased inflammation. Myeloperoxidase (mpo)-positive neutrophils present in the intestine at 8 dpf.

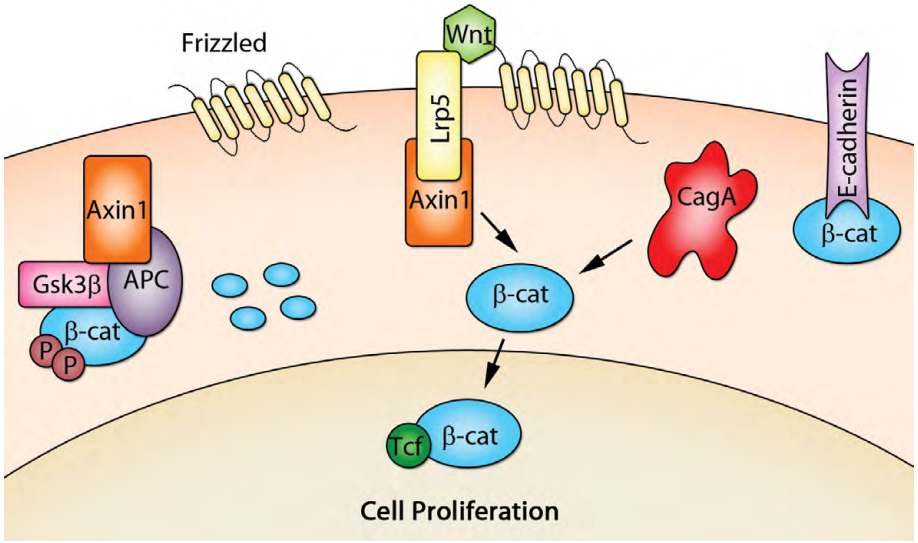

Fig. S4. Proposed mechanism for CagA-dependent overproliferation of the intestinal epithelium.

Genotype	Number of individuals	Hyperplasia/Dysplasia	Intestinal Adenocarcinoma	Other Carcinoma
WT	22	0	0	0
b-cagA	24	8 (33%)	0	0
i-cagA	19	8 (42%)	0	0
b-cagA^{EPISA}	18	0	0	0
tp53$^{M214K/M214K}$	5	2 (40%)	1 (20%)	1 (oropharygeal carcinoma *in situ*)
i-cagA; tp53$^{M214K/M214K}$	7	1 (14%)	3 (43%)	2 (29%) (intestinal small cell carcinoma)

Table S1. Histological abnormalities by genotype. Type and frequency of unique histological abnormalities observed in adult zebrafish. One fish from genotype *tp53*$^{M214K/M214K}$ had both intestinal adenocarcinoma and oropharyngeal carcinoma *in situ***.**

Gene	Forward (5'-3')	Reverse (5'-3')
Succinate dehydrogenase (SDHA)	GeNorm zebrafish reference gene kit	GeNorm zebrafish reference gene kit
β-actin	GeNorm zebrafish reference gene kit	GeNorm zebrafish reference gene kit
cagA	tggagggcctactggtgggga	tcaggcggtaagccttgtatgtcgg
myca	ccagcagcagtggcagcgat	ggggactggggtacctcgactct
cyclinD1	aggcttttgaaacgtaagcctgcgg	aggtacacttgggcatccgtgca

Table S2. Primers used for quantitative real-time PCR