



Supplementary Fig. 4. Comparison of expression patterns of p β -cat-Ser552, Top-Gal, p27^{kip1}, and Cyclin D1.

A. Cells with nuclear β -catenin detected by anti-p β -cat-S552 were found in positions located between villus and crypt, stem cell, Paneth cells, and mid-upper region of crypts. Perinuclear β -catenin at relatively lower levels was found in some crypt cells.

B. Cells positive for Top-Gal were found mainly in crypts, in which Top-Gal-positive cells were seen in cells at the stem cell position, Paneth cells, and mid-upper region of crypts. In the early stage of PTEN mutant intestine, clusters of Top-Gal-positive cells were also seen in the villus region.

C. Cells with nuclear p27^{kip1} were mainly found in the stem cell position and Paneth cells, and correlated with pAkt. Cells with cytoplasm p27^{kip1} were often found in the mid-upper region of crypts and also correlated with high levels of p-Akt.

D. Cells with nuclear Cyclin D1 were mainly found in the stem cell position, in Paneth cells, and in the mid-upper region of crypts.

E. Co-staining of p27^{kip1} with Musashi1, β -catenin, and p β -cat-S552.