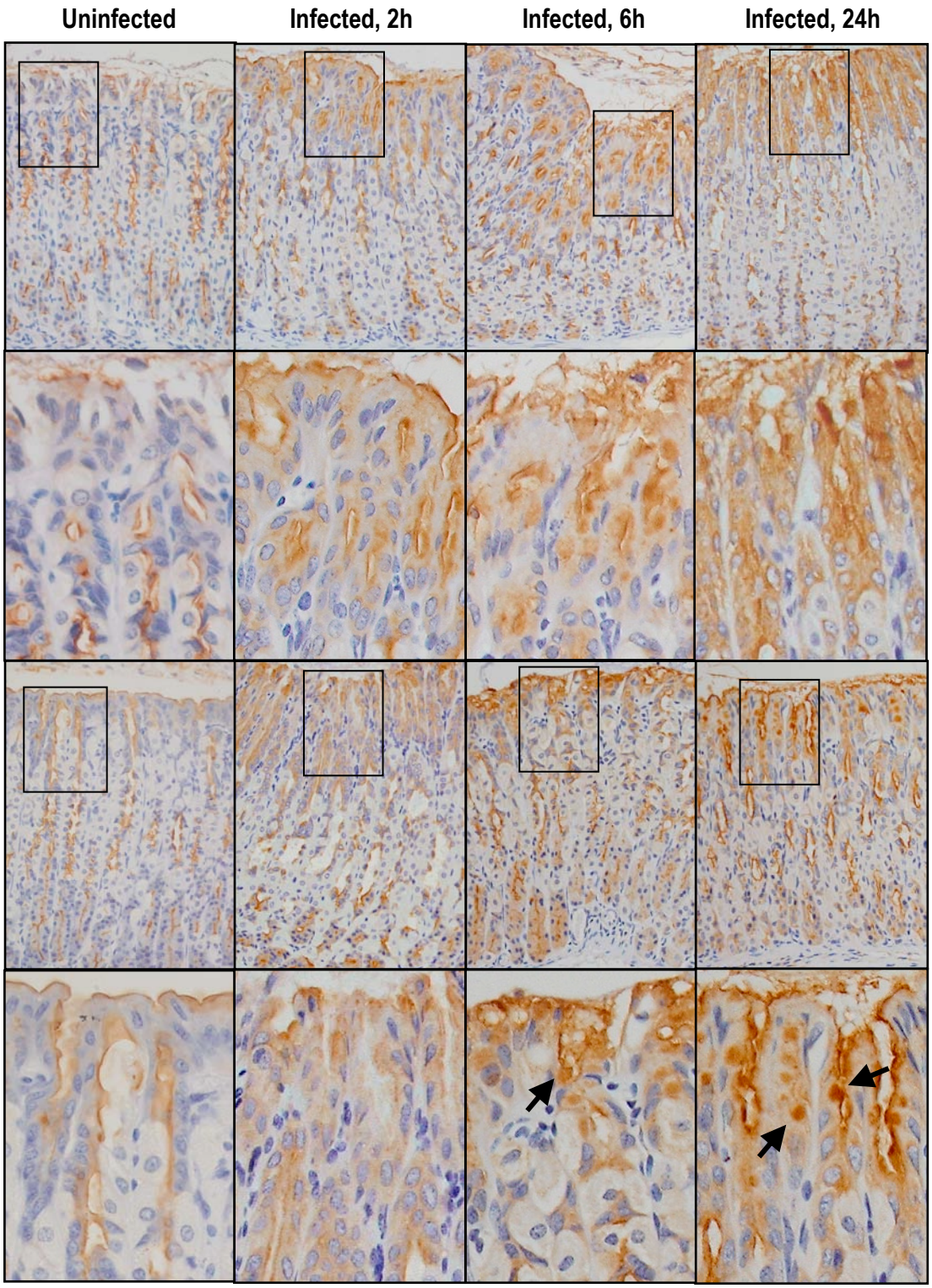
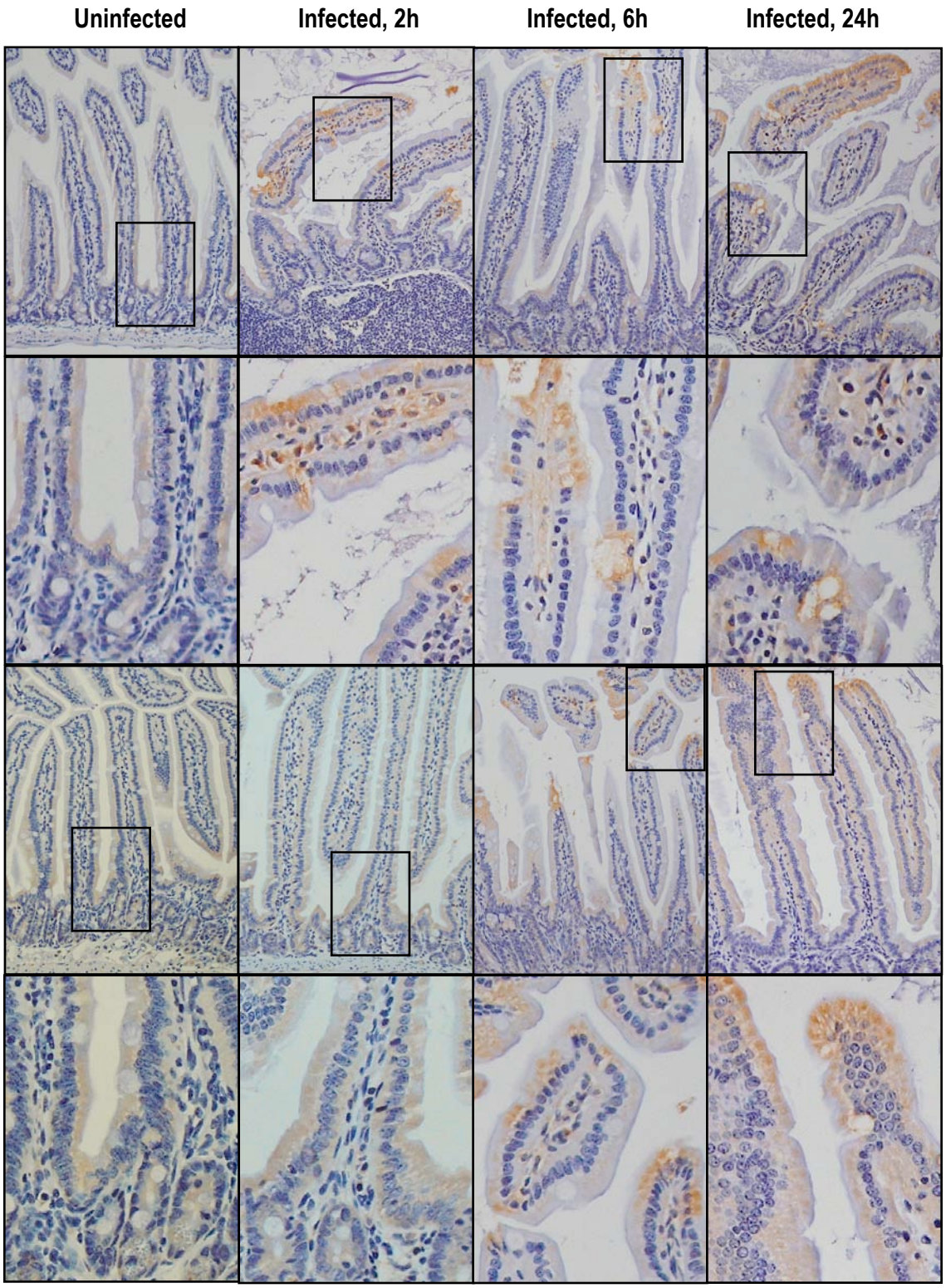
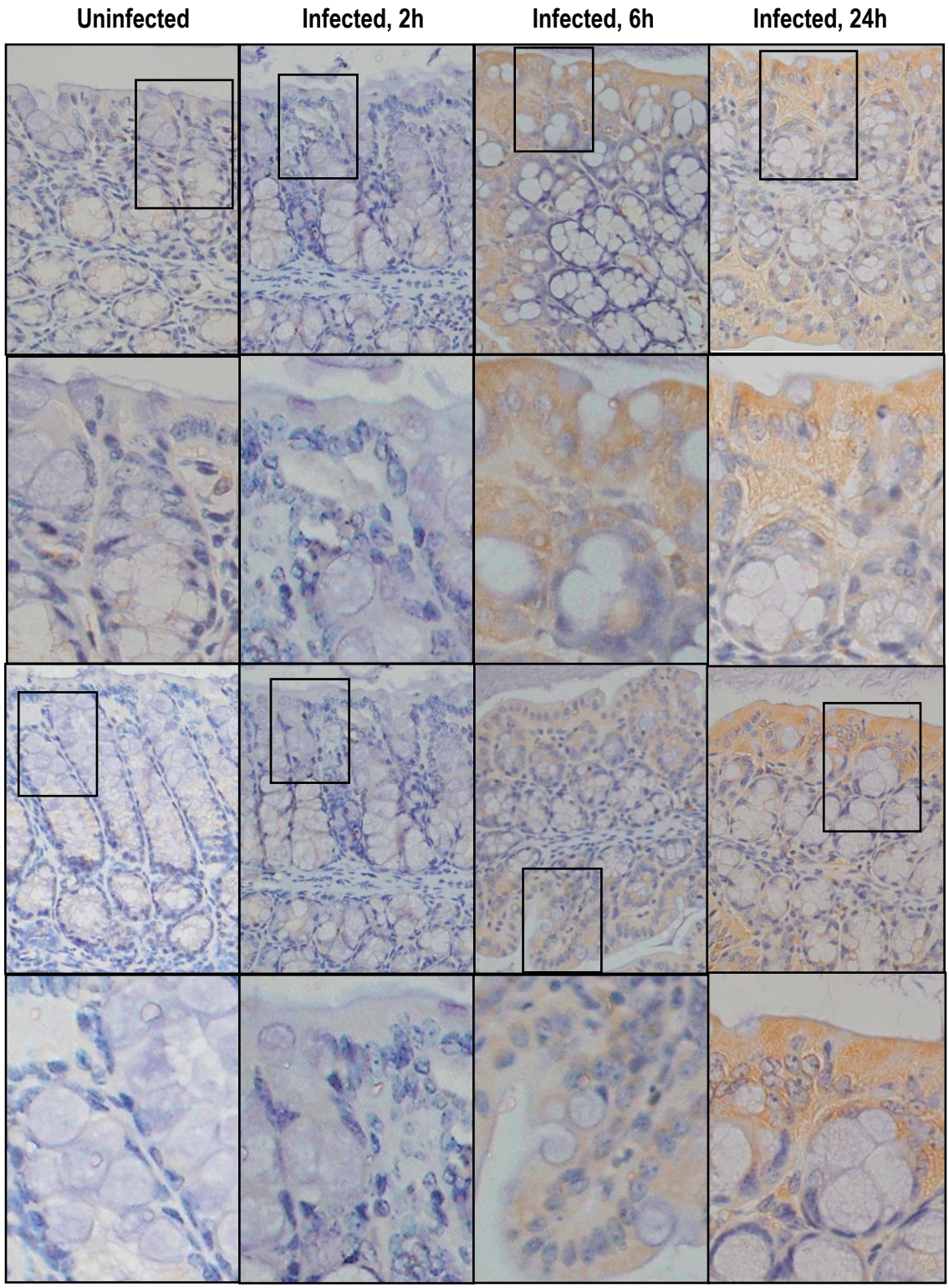
Supplementary Fig. 1A



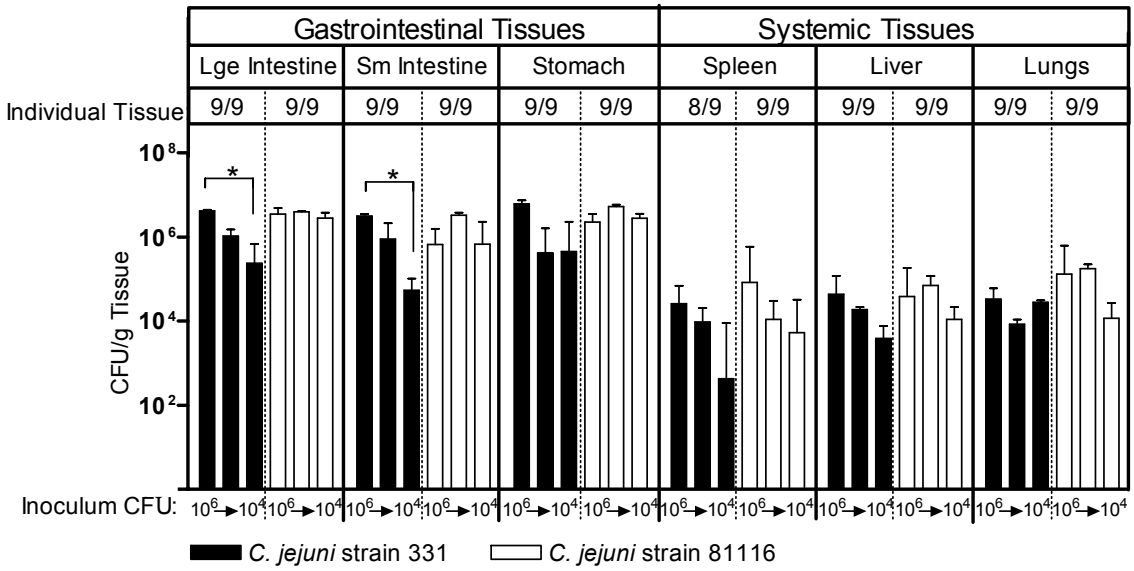
Supplementary Fig. 1B



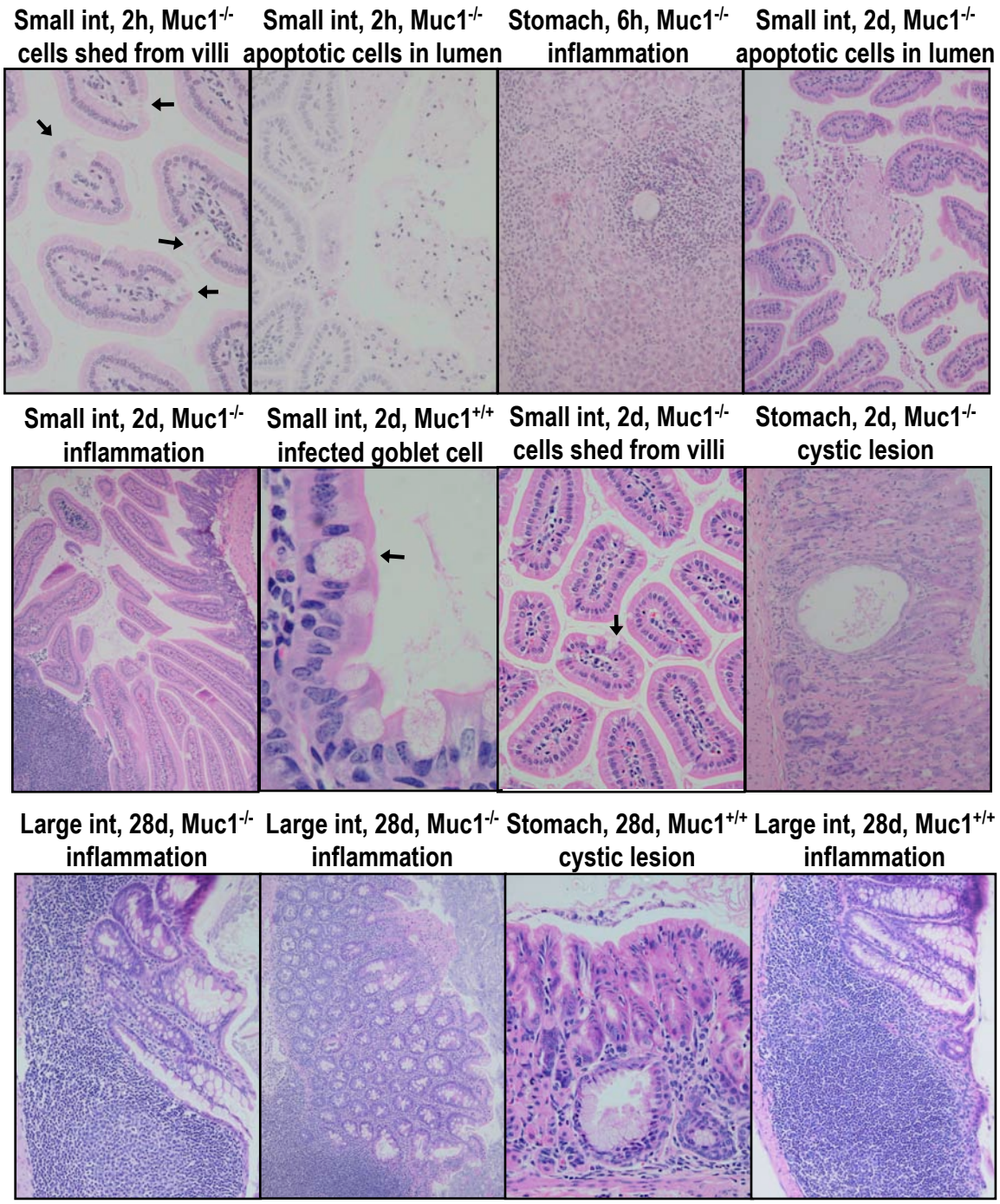
Supplementary Fig. 1C



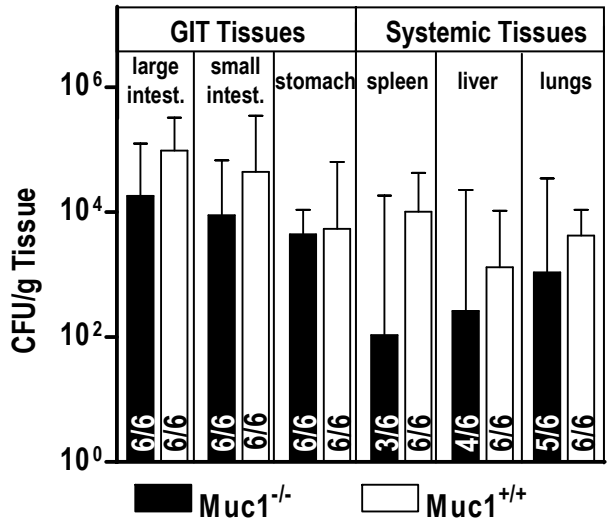
Supplementary Figure 2



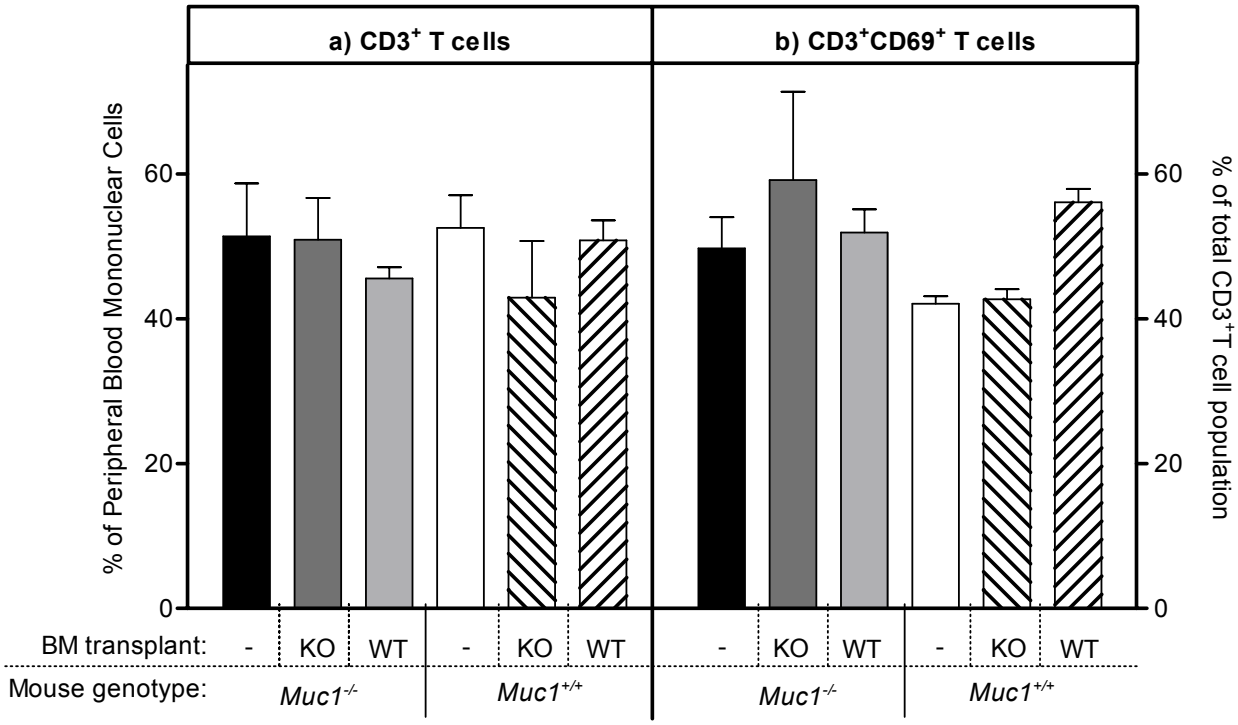
Supplementary Figure 3



Supplementary Figure 4



Supplementary Figure 5



Supplementary Figure Legends

Supplementary Figure 1

Gastrointestinal expression of Muc1 is rapidly upregulated in response to infection with *C. jejuni*. Representative examples of Muc1 expression determined by immunohistochemistry in the stomach (A), small intestine (B) and large intestine (C) of uninfected *Muc1*$^{+/+}$ mice and mice infected with 10^4 *C. jejuni* for 2, 6 and 24h. Arrows in (A) show large intracellular accumulations of Muc1.

Supplementary Figure 2

C. jejuni strain 331 and strain 81116 show similar virulency in *Muc1*$^{-/-}$ mice. Concentrations of *C. jejuni* in gastrointestinal and systemic tissues of *Muc1*$^{-/-}$ and *Muc1*$^{+/+}$ SvJ/129 mice four days after oral inoculation with 10^6, 10^5 or 10^4 *C. jejuni* strains 331 and 81116. Mean ± SD of CFU/g tissue. The pooled colonization frequency for each bacterial strain and host tissue (number of animals from which colonies were obtained/total number in the group) is shown. Mean ± SD CFU/g tissue. Statistics: Mann-Whitney U-test, *P<0.05.

Supplementary Figure 3

Epithelial damage in the gastrointestinal epithelium of *C. jejuni* infected *Muc1*$^{-/-}$ and *Muc1*$^{+/+}$ mice. Tissue type, mouse genotype, time after inoculation and a summary of the features demonstrated are shown above each photomicrograph. Haematoxylin and eosin staining.

Supplementary Figure 4

S. typhimurium translocates to systemic organs in both *Muc1*$^{-/-}$ and *Muc1*$^{+/+}$ mice**.** Concentrations of *S. typhimurium* in gastrointestinal and systemic tissues of *Muc1*$^{-/-}$ and *Muc1*$^{+/+}$ mice 2d after oral inoculation with 10^2 *S. typhimurium* strain 8216915. Mean ± SD of CFU/g tissue. The colonization frequency (number of animals from which colonies were obtained/total number in the group) is shown at the base of each histogram. Statistics: *Muc1*$^{-/-}$ vs *Muc1*$^{+/+}$, ANOVA Tukey's post-hoc test, *P<0.05.

Supplementary Figure 5

Levels of T cells and activated T cells did not differ in the peripheral blood of *Muc1*$^{-/-}$ and *Muc1*$^{+/+}$ chimeric, procedural control and aged matched control mice. (A) The mean ± SD percentage of $CD3^+$ T cells in peripheral blood mononuclear cells determined by flow cytometry in *Muc1*$^{-/-}$ and *Muc1*$^{+/+}$ mice transplanted 6 months previously with *Muc1*$^{-/-}$ (KO) and *Muc1*$^{+/+}$ (WT) bone marrow, and in age-matched control mice. (B) The percentage of $CD69^+$ cells in the $CD3^+$ T cell population detected in (A). Statistics: no significant differences between groups, ANOVA.