

Table S1 Percent amino acid identity of CpxRA from various *E. coli* strains to the CpxRA homologues in *C. rodentium*.

Strain	Protein		
	CpxA	CpxR	CpxP
<i>Escherichia coli</i> K12 MG1655	99%	97%	88%
EPEC O127:H6 E2348/69	99%	97%	88%
EHEC O157:H7 EDL933	98%	97%	88%

Table S2 Histopathological scoring for colonic tissue from mice.

Pathological characteristics	Maximum score (in parentheses)
Gland loss	(0) Normal density of glands (1) Rare, small foci of gland loss, over small areas (2) Occasional small foci of gland loss (3) Frequent small foci of gland loss, or rare wide foci (4) Extensive areas of gland loss
Goblet cell/enterocyte ratio decrease	(0) Normal goblet cell/enterocyte ratio; marked predominance of goblet cells, except in base of glands (1) Decrease in goblet cell proportion affecting few glands (2) Decrease in goblet cell proportion affecting several glands (3) Decrease in goblet cell proportion affecting frequent glands (4) Decrease in goblet cell proportion affecting most or all tissue
Inflammatory cell infiltration	(0) Occasional resident inflammatory cells in lamina propria; predominantly lymphocytes and plasma cells (1) Minimal increase in inflammatory cells (2) Mild increase in inflammatory cells (3) Moderate increase in inflammatory cells (4) Marked increase in inflammatory cells
Inflammatory cell localization	(0) No significant inflammatory infiltration (1) Inflammatory cell infiltration localized to the lamina propria (2) Inflammatory cell infiltration extending significantly into the submucosa (3) Inflammatory cell infiltration extending significantly into the muscularis (4) Inflammatory cell infiltration extending significantly to the serosa/mesentery
Mucosal necrosis	(0) No area of mucosal necrosis (1) Rare, small foci of mucosal necrosis; replacement of normal tissue by fibrin, hemorrhage, necrotic cells (2) Occasional small foci of mucosal necrosis (3) Frequent small foci of mucosal necrosis, or rare wide foci (4) Extensive areas of mucosal necrosis
Submucosal edema	(0) No edema present (1) Mild edema, rare areas (2) Mild edema in frequent areas (3) Moderate edema in frequent or extensive areas (4) Marked edema, frequent to diffuse
Surface epithelial injury	(0) Normal surface epithelium (1) Rare to occasional areas of epithelial flattening, degeneration or exfoliation (2) Frequent areas of epithelial flattening, degeneration or exfoliation (3) Rare to occasional areas of epithelial flattening, degeneration or exfoliation with rare areas of epithelial erosion/ulceration (4) Frequent or extensive areas of epithelial ulceration

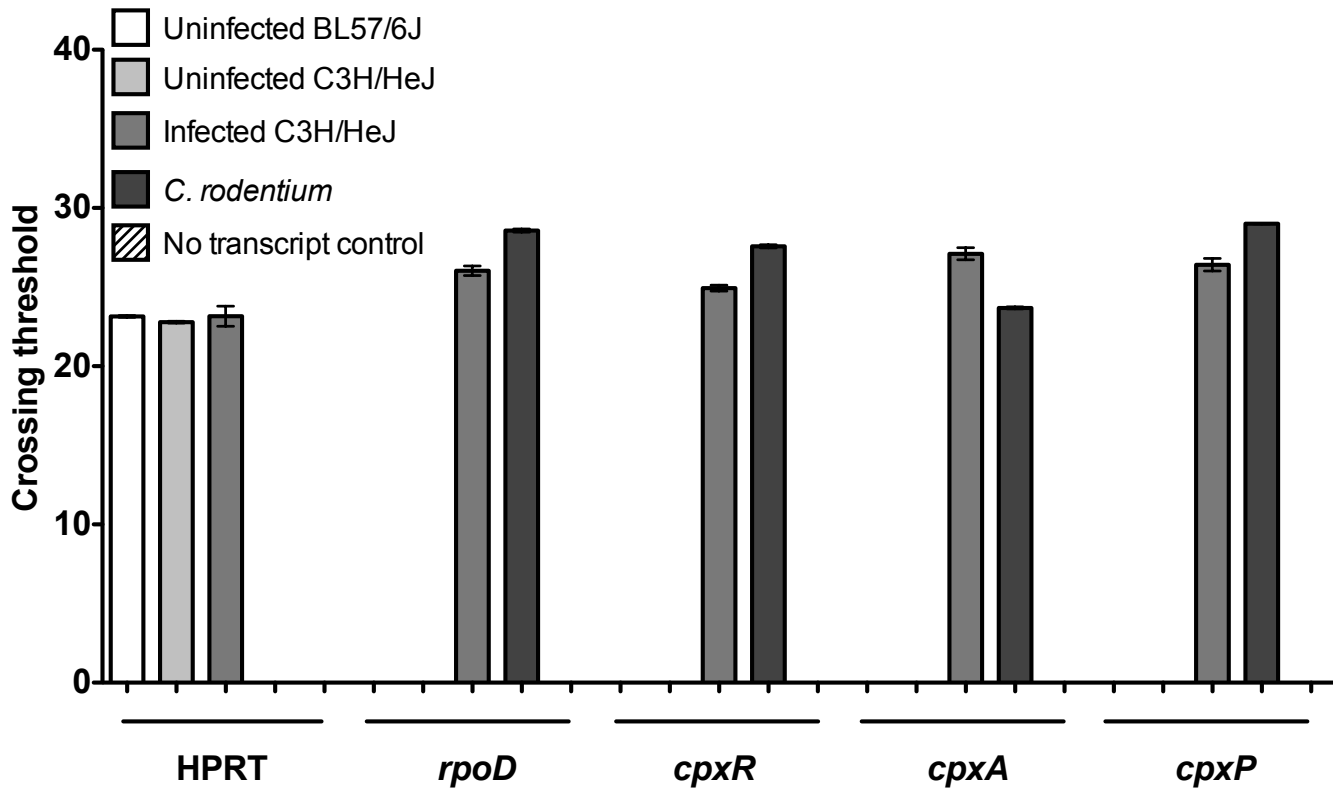


Figure S1 qPCR testing specificity of *C. rodentium* primers in uninfected and infected mice. Shown is the crossing threshold of the product amplified for the indicated gene (x axis) from the indicated sample. cDNA generated from bacteria grown in LB broth is indicated by the label *C. rodentium*. Primers amplifying hypoxanthine guanine phosphoribosyl transferase (HPRT) were used to confirm the presence of murine cDNA in the samples.

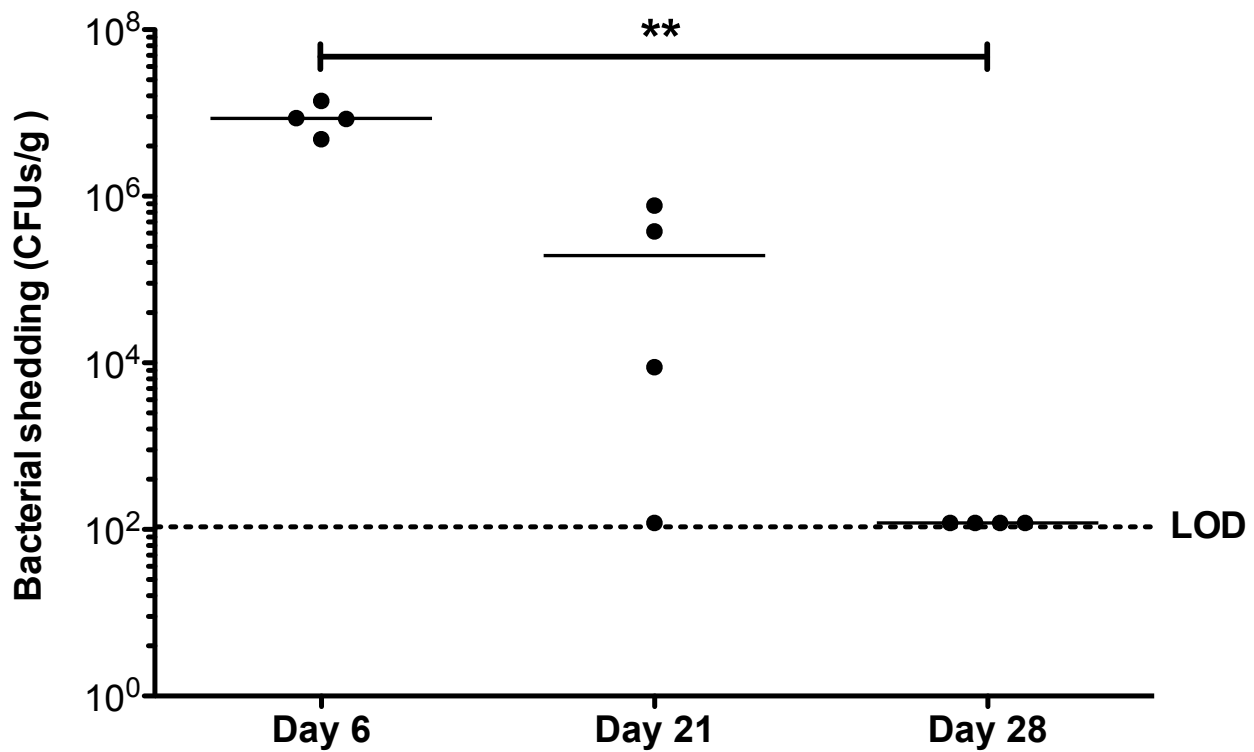


Figure S2 C3H/HeJ mice infected with the $\Delta cpxRA$ strain clear the infection. C3H/HeJ mice were infected with the $\Delta cpxRA$ strain and CFU/g of feces was determined by serial dilution and plate count. The horizontal lines indicates the median amount of $\Delta cpxRA$ CFU/g shed per day. LOD indicates the limit of detection. Asterisks (**, $P < 0.01$) indicate statistical significance as determined by kruskall-wallis test and Dunn's multiple comparison *post hoc* analysis.