

"Linking pathogen virulence, host immunity and the microbiota at the intestinal barrier"

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The mechanisms that allow enteric pathogens to colonize the intestine and host immunity as well as the indigenous microbiota to inhibit pathogen colonization remain poorly understood. Our laboratory is using *Citrobacter rodentium*, a mouse pathogen that models human infections by enteropathogenic *E. coli*, to understand the mechanisms that regulate the colonization and clearance of the pathogen in the gut. These studies have revealed how the pathogen colonizes and replicates successfully early during infection and how host immunity and the indigenous microbiota cooperate to eradicate the pathogen in the later stage of the infection. The impairment of the immune system to control the barrier function of the intestine leads to pathogen invasion and the induction of a second layer of host protective immunity to limit the systemic spread of the pathogen.