The role of the host response in colicin-dependent *E. coli* – *Salmonella* competition in the gut

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The host’s immune system plays a key role in modulating growth of pathogens and the intestinal microbiota. Here, we investigated competition of pathogenic *Salmonella enterica* serovar Typhimurium (S. *Tm*) with commensal *E. coli* strains in the gut. Co-infection experiments using S. *Tm* and commensal *Escherichia coli* strains in a mouse colitis model showed that the pathogen can benefit from production of a bacterial toxin, colicin Ib. However, the colicin Ib dependent advantage was only observed in the presence of inflammation. Thus, we investigated how inflammation affects colicin Ib-dependent competition of *Salmonella* and *E. coli*. We show that both, colicin Ib and its cognate outer-membrane receptor CirA on *E. coli*, are upregulated under the conditions prevailing in the inflamed gut. Thus, inflammation fuels colicin Ib dependent competition of S. *Tm* and commensal *E. coli*. This reveals how inter-bacterial competition is modulated by the host’s immune response in the gut and sheds new light on the mode of action of enterobacterial colicins.