Journal Club
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First Paper

Antivirulence Activity of the Human Gut Metabolome

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Background

- The gut microbiota protects the host from pathogens through different methods
- The inhibition of pathogen colonization is influenced by nutrient deprivation, but other factors are also important
- Fully colonized mammalians are resistant to infection from *Salmonella*
- **Research question:** How does the microbiota repress the expresion of *Salmonella* virulence factors?

Summary and Highlights

- Human fecal extract reduces the proliferation rate of *Salmonella* and changes the expression profile
- Human fecal extract inhibits the expression of pathogenicity genes and the *in vitro* invasion rate
- Certain *Clostridium* species found in the gut produce molecules that can be attributed to the observed effect

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Second Paper

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RESEARCH ARTICLE

Nutrient Deprivation Affects *Salmonella* Invasion and Its Interaction with the Gastrointestinal Microbiota

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Background

- The microbiota protects the host during *Salmonella* infection
- Culture of *Salmonella* in fecal extract reduce the pathogenesis
- The availability of simple sugars increases the pathogenesis of *Salmonella* specially in the antibiotic treated gut
- **Research question:** Are the available carbohydrates pre-infection affecting the pathogenesis of *Salmonella*?

Summary and Highlights

- Nutrient deprivation decreases the expression of virulence factors *in vitro*. This is similar to fecal extract grown *Salmonella*.
- Nutrient deprivation decreases cell invasion *in vitro*
- None of this is relevant *in vivo* regarding infection or colonization
- There seems to be an microbiota related effect, but the evidence is not convincing
- Paper relevant because shows that the culture conditions or vehicle are not that relevant for *Salmonella* infections

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