Differential Effects of Commercially Available Probiotics on *Listeria monocytogenes* Virulence

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Abstract

*Listeria monocytogenes* is a foodborne pathogen which localizes in the human gastrointestinal tract and causes lethal infection in immunocompromised individuals. We have evidence that suggests intestinal fermentation acids act as potential signals for *Listeria* virulence regulation. Therefore, we hypothesized that probiotic bacteria, which generate different fermentation acids, will exhibit different levels of inhibition concerning *Listeria* virulence.

Background

1) The gut microbiota provides protection against opportunistic infections.

2) Better understanding of how the gut microbiota protects individuals will allow for the development of novel preventative and therapeutic treatments.

3) *Listeria* transits through the gastrointestinal tract and is exposed to numerous fermentation acids.

4) Once infection begins, *Listeria* produces Listeriolysin O (LLO), a toxin that can be measured as an indicator for virulence activation.

Main Findings

1) MRS broth supports the growth of both probiotic samples

2) *Listeria* growth is inhibited when co-cultured with probiotics

3) Probiotic supernatant compromises *Listeria* survival

4) Probiotics A and B showed different effects on LLO production.

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