Role of Flagellin Methylation in Attachment of *S. enterica* to Plant Cell Walls

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Salmonella is a gram-negative, rod-shaped bacterium that causes a form of food poisoning called salmonellosis, which occurs in 1.2 million people each year in the United States. Outbreaks are increasingly being linked to fruits and vegetables, which are usually consumed raw and as such pose a higher risk of infection. It is known that *S.* Typhimurium methylate its flagellum, however, the exact role of this post-translational modification is unknown. The purpose of this research is to determine the role of flagellin methylation in attachment to plant cell walls. It is hypothesized that if flagellin methylation of *S. enterica* favors hydrophobic interactions with plant cell wall components, then these interactions will be impaired by deleting the methyltransferase gene (fliB). The fliB gene was targeted for deletion using Lambda Red recombineering, and the ability of wild-type and mutant strains to interact with red leaf lettuce was assessed. Analysis of pooled data from all serovars revealed that attachment to red leaf lettuce was better when cells were grown in Lennox agar plates compared to low-salt plates, but broth-grown cells did not attach differently in response to medium salinity. Conversely, colonization and persistence levels were not influenced by medium salinity. However, these trends mask the influence that medium salinity has on the ability of individual serovars to interact with the lettuce. In Lennox media at 37°C serovars Enteritidis and Javiana showed the highest levels of hydrophobicity in broth, while serovar Agona was the most hydrophobic on agar plates. In low-salt media at 37°C, all serovars except Agona showed equal levels of hydrophobicity in broth, while serovar Enteriditis was the most hydrophobic on agar plates. Future work will seek to correlate surface hydrophobicity to strength of interactions to red leaf lettuce and to confirm deletion of the fliB gene to further our understanding of methylation in plant-bacterium interactions.

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