How *L.monocytogenes* responds to lights?

My name is Amber Dorey, I am from Guernsey in the Channel Islands and I am 22 years old. I completed my undergraduate degree in Biology at the University of Bath, and my Masters degree at the London School of Hygiene and Tropical Medicine in Medical Microbiology. During the university holidays, I worked in the States Analyst' Laboratory in Guernsey carrying out microbiological and chemical analysis on drinking and environmental water samples. I am currently undertaking my PhD at the National University of Ireland, Galway investigating the molecular response of *Listeria monocytogenes* to visible light.

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Objectives

The aim of my project is to investigate how *L. monocytogenes* responds to light. Light has been shown to inactivate bacteria, yet *L. monocytogenes* is able to survive within the environment in the presence of light. Therefore, it must be able to adapt to overcome this environmental stress. I am interested in determining which genes encode the proteins necessary for *L. monocytogenes* to survive in the presence of light.

Experiments

To do this, I want to carry out analysis of the genome in both the presence and absence of light to pinpoint genes whose expression is altered in the presence of light. I will then generate mutant bacteria that have had these genes removed from their genome, and culture them in the presence of light to determine whether these genes play a role in the response of *L. monocytogenes* to light. I will also use the mutants that I have generated in experiments to investigate how an altered susceptibility to light affects the ability of *L. monocytogenes* to form biofilms and to survive within the soil. Biofilms and soil survival are both important aspects of the *L. monocytogenes* lifecycle, and are stages at which light stress may be encountered. Therefore, there may be an interlink between the genes required for each of the processes.

Contact

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