



Biofilm of *L.monocytogenes* : threat for food companies



Hello, my name is **Bohyung LEE** from South Korea. I have studied Veterinary medicine for 8.5 years and previously was engaged in three different laboratories; veterinary toxicopathology, veterinary pharmacology, and laboratory of lung and heart diseases. I have acquired different skills and knowledge during the study in the three laboratories and now I am preparing to be a microbiologist with my broad background in biology by working as a Ph.D student in two companies (BioFilm Control in France and GenXPro in Germany). I am studying about the bacterium *Listeria monocytogenes* which poses high threat to public health and well-being by contaminating food products such as various meats and dairy food. I am going to explore their phenotypic and genotypic traits in food processing premises.

In food processing companies, especially dairy food and meats, they are always in danger of being exposed to *L. monocytogenes*. This ubiquitous pathogen poses high mortality and results in around 400 death per year in France and causes billions of loss in food industry due to contamination in their food products. They persist and grow on floors, drains, and equipment within food industry premises and they even can be routinely detected in refrigerated rooms since *L. monocytogenes* are psychrotrophic bacteria which means they can survive or thrive in cold environment.

Objectives

I am going to explore one of their distinct features 'biofilm' which consist layers of bacteria with their extracellular polymeric substances formed on any kind of surfaces to resist against and survive from environmental stresses such as disinfectant. I want to **test under which conditions they are more likely to form biofilm** and furthermore which enzymes or chemicals are efficient to eradicate them in those conditions. I will also develop an assay to analyze genetic target which may have a potential for virulence of *L. monocytogenes*.

Expected results

From this results, we hope to understand better where the *L. monocytogenes* are more likely to create biofilm and maybe how to remove them from food processing companies. Moreover, we hope to **find a virulence target gene that can play a role in biofilm formation** in order to suggest an idea for antibiotics or disinfectants against *L. monocytogenes*.

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