

Since over decade *Campylobacter jejuni* is the most prevalent bacterial foodborne-pathogen in Europe and the major cause of bacterial watery diarrhea worldwide. The major source of human infections are poultry and poultry products and humans can be infected via consumption of undercooked and mishandled meat contaminated with the pathogen or by cross-contamination of cooking tools and fresh vegetables. In humans the bacterium colonizes small and large intestine contributing to fever, abdominal pain and diarrhea though possible autoimmunological complications may occur. A key factor helping the pathogen to withstand environmental stress is a biofilm formation. Biofilm is an association of microorganisms within matrix of extracellular polymeric substances. In biofilm bacteria are difficult to eradicate due to strong adhesion to the surface. Such bacteria are also more resistant to disinfectants and antibiotics. In natural environment vast majority of bacteria exist in biofilm rather than as planktonic cells. *Campylobacter*-containing biofilms occur in gastrointestinal tract of birds, poultry houses, slaughterhouses and as a result may play a role in the transmission of *Campylobacter* from the environment to humans. Biofilm formation process is relatively well recognized in *Pseudomonas aeruginosa* and *Escherichia coli*. It has been shown that biofilm formation is a multifactorial, complex process involving many genes. However, little is known about the mechanism underlying biofilm formation by *C. jejuni*. Therefore, the aim of this project is the identification of genes required for biofilm formation using transposon mutagenesis. Transposons are the mobile genetic elements able to insert randomly in the genome. Insertion of the gene by transposon usually results in gene inactivation thus preventing protein production. To identify genes involved in biofilm formation library of 7500 mutants of 81-176 *C. jejuni* strain will be constructed in which genes will be inactivated by the transposon insertion. Each mutant will be screened for biofilm formation assuming that inactivation of genes associated with biofilm affects the ability to form this structure compared to the parent non-mutated strain. The results of this project will help in understanding the mechanism underlying biofilm formation that is indispensable for *C. jejuni* survival in the environment. This knowledge might be helpful in designing biofilm-disrupting inhibitors and thereby increase food safety and reduce the risk of public health.