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## *Campylobacter jejuni* and chicken colonization: Different strains, different abilities

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*Campylobacter jejuni* is a food borne pathogen mainly associated to chickens, reaching caecal concentration up to 10<sup>9</sup> CFU/g. Scarce reports mention clinical signs associated to *C. jejuni* chicken colonization, making it a bacteria acting like a commensal. One aspect of our work focuses on the characterization of the ability of *C. jejuni* to colonize the chicken caecum. *C. jejuni* chicken strains were characterized for their ability to autoagglutinate, to be attracted to mucins and to adhere or invade chicken primary caecal cells; these phenotypes having individually been linked to the ability of strains to colonize chickens. In parallel, a microarray was developed to screen the strains for genes that could be linked to colonization. Strains were also typed by comparative genomic fingerprinting. We confirmed *in vivo* that strains possessing different phenotypes also possessed different abilities to compete for the colonization of the chicken gut. This ability could be associated with genes such as genes coding for arsenical resistance. Representative strains possessing the best competition abilities were also used in a series of *in vivo* chicken studies to assess the efficiency of control methods to lower *C. jejuni* chicken caecal loads. Limited results were obtained, showing the complexity of the intestinal microbial ecosystem. The effect of the colonization of these strains on the chicken microbiota was also assessed and we observed small disturbance of some bacterial populations. Our strain collection is currently being sequenced and further characterized *in vitro* to deepen our understanding of *C. jejuni* chicken colonization.

### Biography

Alexandre Thibodeau has completed his PhD at the University of Montreal, Canada. He is currently pursuing Postdoctoral studies at the NSERC and is an Industrial Research Chair in Meat Safety in Dr. Ann Letellier Laboratory at the Faculty of Veterinary Medicine of the University of Montreal, Canada. He is a Specialist of *Campylobacter jejuni* and his Postdoctoral research focuses mainly on *C. jejuni* and the chicken microbiome.

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