



## 5<sup>e</sup> Symposium du CRIP

**Mercredi 16 mai & jeudi 17 mai 2012  
à la Faculté de médecine vétérinaire  
de Saint-Hyacinthe, Québec, Canada**

### **Présentation orale**

#### **Lack of correlation between *Campylobacter jejuni in vitro* phenotypic properties in field isolates**

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*Campylobacter jejuni* is a major cause of foodborne infections. It is the zoonotic agent responsible for campylobacteriosis, a gastroenteric disease that may evolve to severe autoimmune disorders. Consuming or mishandling contaminated poultry meat products is an important source of human campylobacteriosis. *C. jejuni* chicken colonization mechanisms are still misunderstood. Many *C. jejuni* phenotypic properties influence chicken gut colonization but correlation between these properties are unknown in field isolates. The aim of this study was to assess phenotypic properties, such as autoagglutination, chemotaxis, adhesion and invasion to chicken primary caecal cells, of *C. jejuni* isolates recovered in 2003 and 2008 from chicken caecal samples. Autoagglutination was tested by measuring changes in optic density of bacterial suspensions. Chemotaxis was assessed using transwell inserts to calculate the proportions of bacteria attracted to mucin. Adhesion and invasion assays were carried out using a primary cell culture obtained from enzymatic digestion of fresh caecum and proportions of primary cells adhering or invading bacteria were evaluated. Results ranged from 15% to 90% for autoagglutination, 0.11 to 1.9 (-log(proportion of attracted bacteria)) for chemotaxis, 0.21 to 0.61(-log(proportion of adhering bacteria)) for adhesion and 0.16 to 0.41(-log(proportion of invading bacteria)) for invasion. All phenotypic properties were found equal between the 2003 and 2008 isolates. In this study, only adhesion and invasion correlated (Spearman,  $p = 0.0120$ ). We conclude, for field isolates, that no clear correlations were present between the evaluated *in vitro* phenotypic properties. Therefore, a prudent and more comprehensive approach should be applied for field strain phenotypic characterization before making any conclusions to chicken colonization capacity of a given isolate.