

Title: PHENOTYPIC COMPARISON AND PRESENCE OF VIRULENCE GENES AMONG *CAMPYLOBACTER COLI* STRAINS ISOLATED IN BRAZIL

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Abstract: *Campylobacter coli* is an important causative agent of human diarrheal diseases worldwide. However, in Brazil it has not been frequently studied. The aims of this study were to analyze the effect of low temperatures in the growth of *C. coli* and to investigate the presence of some virulence genes of *C. coli* strains isolated in Brazil. A total of 50 *C. coli* strains isolated in Brazil from human feces (12), food (8) animals (15) and the environment (15) between 1995-2011 and two control strains, *Salmonella* Typhimurium ATCC 14028 and *Campylobacter jejuni* ATCC 3329, were studied. For the phenotypic test, the strains were grown at 42°C overnight on BBL Columbia Agar Base, supplemented with charcoal and FBP [0.05 % ferrous sulphate, 0.05 % sodium pyruvate and 0.05 %sodium metabisulphite diluted in sterile water] under microaerobic conditions. After incubation, a single colony from the plate was collected and inoculated in 9 mL of BHI broth and incubated at 42 °C under a microaerobic atmosphere for 16 h to obtain stationary phase cells that were used to analyze the effects of low temperature storage at 4 °C for 24 hours. The phenotypic experiments were conducted in three independent replicates and a statistical analysis was performed. The presence of 11 virulence genes was searched by PCR. All the strains of *C. coli* studied grew after 24 hours at 4 °C. There was no significant growth difference when comparing the studied strains with the control strains. All strains presented the *flaA*, *cadF* and *sodB* genes. The *cdtB* gene was detected in 13 (26%) strains; the *flhA* gene was detected in 11 (22%) strains; the *dnaJ* gene was detected in 9 (18%) strains; the *pldA* gene was detected in 7 (14%) strains ; the *iamA* gene was detected in three (6%) strains; the *cdtC* and *docA* genes were found in two (4%) strains; the *cdtA* and *crsA* were found in one (2%) strain and the *ciaB*, *wlaN*, *virB11* and *racR* genes were not detected. The *C. coli* survival rates at low temperature indicate that better control measures may be needed given the importance of foods as vehicles of *C. coli* along with the extensive use of low temperatures for preservation. The presence of important virulence genes indicates the pathogenic potential of those strains.

Keywords: *Campylobacter coli*, virulence genes, effect of low temperature, Brazil

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