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Investigation of the clade-specific pathogenic potential of *Campylobacter coli*

Content

Human campylobacteriosis is a major foodborne disease, with ~11% due to *Campylobacter coli* (*C. coli*) infections. Most *C. coli* strains isolated from human cases belong to clade 1A. In contrast, clade 2 and 3 strains are less frequently identified in human cases, but are widespread in the environment. This study aims to investigate whether *C. coli* strains of clades 2 and 3 exhibit lower pathogenic potential than clade 1A strains. Human colonic cell lines (HT-29/B6, T84) were used for *in vitro* assays to determine the cytotoxicity (WST-1-assay), as well as the adhesion- and invasion-ability of *C. coli* strains belonging to clades 1A, 1C, 2 and 3, respectively. All *C. coli* strains were able to adhere to and invade both cell lines, with strain-dependent variances. The cytotoxic potential of clade 3 strains was exceeding those of the other clades, as they reduced the metabolic activity of HT-29/B6 cells as early as 18h after infection. A similar reduction induced by most strains from other clades was observed only after 48h. However, reduction of the metabolic activity of T84 cells was exclusively measurable after infection by clade 3 strains after 48h. In conclusion, our results indicate a higher cytotoxic potential for *C. coli* clade 3 strains, whereas no apparent difference in the adhesion or invasion ability could be detected. Therefore, the lower prevalence of clade 3 strains in human cases appears to depend on factors other than those investigated in this study.

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