Association of CiaB with membrane raft-microdomains increases *Campylobacter jejuni*-induced pathogenesis of cells

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Abstract

Campylobacter jejuni (*C. jejuni*) is one of the most important pathogen that induced gastrointestinal disease in human worldwild. Consist with the clinical outcomes of intestinal epithelium inflammation by *C. jejuni*, which was thought to harbor the ability in the invasion of host cells. It has been reported that infection of *C. jejuni* requires CiaB (*Campylobacter* invasion antigen B) for efficient internalization of bacterium into host cells. In this study, direct sequence comparisons revealed that CiaB amino acid sequence was similar to type III secretion system (TTSS), which was found to be required sufficient membrane cholesterol for its pathogenesis. Our data showed that the invasion activity was significantly decreased in ΔCiaB mutant strain when compared with wild-type *C. jejuni*. In addition, depletion of cholesterol reduces the association of CiaB with lipid rafts. Our results revealed that cellular cholesterol plays a critical role in the infection of cells by *C. jejuni*. Investigation of bacterial secreted protein will lead to a better understanding of the pathogenic mechanisms associated with *C. jejuni*–induced enterocolitis.

Keywords：*Campylobacter jujuni*, type III secretion system, *Campylobacter* invasion antigen B (CiaB)