Identification and Functional Analysis of Non-Typhoidal Salmonella spp. Containing Cytolethal Distending Toxin B


Background:
Worldwide estimates of Salmonella infection caused by serotypes other than Typhi or Paratyphi (Non-typhoidal salmonellosis) range from 200 million to 1.3 billion, with an estimated 3 million deaths each year. However, most severe Salmonella infection is typhoid fever which causes diarrhea and systemic disease. Salmonella Typhi is only known serovar that can cause typhoid fever. In the US the number of cases estimated for Salmonella Typhi is much lower than non-typhoidal Salmonella, though, proportion of hospitalized cases for Salmonella Typhi is higher than non-typhoidal Salmonella (75% versus 1.1% respectively). Cytolethal distending toxin (CDT) is a toxin which can arrest growth of infected host cells and extend persistence of pathogenic bacteria in the host. CDTB is a conserved virulence factor in Salmonella Typhi and is associated with prophage. We carried out this study to investigate presence of CDTB gene in non-typhoidal Salmonella (NTS) serovar.

Methods:
Cytolethal distending toxin B was identified in several NTS serovar by PCR. Macrophages were used to study the cellular effect of CDTB. Infection study was...