

Abstract of Presentation

Presentation Title:

Two functionally distinct Type III secretion systems for *Salmonella* pathogenesis

Abstract:

Type III secretion systems (TTSSs) are specialized organelles of Gram-negative bacteria that deliver proteins to host cells. The TTSS apparatus is a needle-like structure on the bacterial envelope and secretes translocon proteins which probably form pore in the host cell membrane and directly inject effector proteins into host cells. The structure of the needle is similar to that of flagellar basal body

Salmonella uses two functionally distinct TTSSs encoded on the pathogenicity islands, SPI1 and SPI2. A major function of SPI1-TTSS is to enable bacterial invasion of epithelial cells and the principal role of SPI2-TTSS is to facilitate the replication of bacteria within *Salmonella*-containing vacuole (SCV) in host cells. The SPI1 is activated extracellularly and repressed inside host cells. In contrast, the SPI2-TTSS is activated intracellularly and the effectors translocated across the SCV membrane target proteins in host cytosol to cause the bacterium to replicate. The function and regulation of the two TTSSs will be overviewed.