Abstract of Presentation

Presentation Title:

Mechanisms controlling the expression of the locus of enterocyte effacement genes in attaching and effacing pathogens.

Abstract:

Enteropathogenic *Escherichia coli* (EPEC), enterohemorrhagic *E. coli* (EHEC) and *Citrobacter rodentium* belong to a family of important bacterial pathogens that produce an intestinal histopathology known as the Attaching and Effacing (A/E) lesion. Genes required for A/E lesion formation are located within the Locus of Enterocyte Effacement (LEE). Ler, an H-NS-like protein encoded within the LEE, induces expression of LEE genes by counteracting the repression exerted by the global regulator H-NS. Ler expression is modulated by a complex mechanism involving several global regulators and A/E-specific positive and negative regulatory proteins such as GrlA and GrlR, encoded by the LEE *grlRA* operon. EPEC strains also produce PerC, an alternative *ler* specific activator with homologues in EHEC (Pch proteins), but not in *C. rodentium*. The study of these regulatory networks has illustrated the diverse evolutionary paths that were undertaken to develop converging mechanisms to specifically control virulence genes in A/E pathogens.

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