Gaylen Uhlich, J Bacteriol Parasitol 2014, 5:4
http://dx.doi.org/10.4172/2155-9597.S1.006

OMICS Group Conferences
Accelerating Scientific Discovery

2nd International Congress on
Bacteriology & Infectious Diseases
November 17-19, 2014 DoubleTree by Hilton Hotel Chicago-North Shore, USA

Production and regulation of functional amyloid curli fimbriae by Shiga toxin-producing *Escherichia coli*

Gaylen Uhlich
United States Department of Agriculture, USA

Functional amyloid, in the form of adhesive fimbrial proteins termed curli, was first described in Salmonella and *Escherichia coli*. Curli fibers adhere to various host cells and structural proteins, interact with components of the host immune system, and participate in biofilm formation. Shiga toxin-producing *E. coli* (STEC) cause severe hemorrhagic diarrheal disease which can progress to hemolytic uremic syndrome in certain cases. STEC typically carry stx1, stx2, or both on lambdoid prophage. Although most STEC possess all of the genes required for functional curli production, curli expression is tightly regulated resulting in great variability in curli production among different STEC strains and serotypes. Curli and the exopolysaccharide cellulose are the major components of STEC biofilms. Both are controlled by the transcriptional regulator *CsgD*, whose expression is dependent on the RpoS sigma factor and enhanced by the *MlrA* transcription factor. We have shown that prophage insertions in the coding region of *mlrA*, often carrying anstx gene, are major barriers that limit *csgD* expression and curli production. This talk will discuss differences in *csgD*-dependent curli expression in various STEC serotypes and present new findings regarding prophage effects on *mlrA* expression and curli production.

gaylen.uhlich@ars.usda.gov