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Co-PI(s): Mark Lawrence, Hossam Abdelhamed, John Brooks (ARS Scientist)

Collaborator(s): None

Objectives:

- Delete structural and motor genes of flagella
- Characterize flagella mutants

Milestones for FY 2016-17:

Title: The role of flagella in the attachment of *Listeria monocytogenes* to catfish fillet

Milestones partially met: Mutant construction and characterization of mutants are in progress.

Progress Report:

Our efforts focused on constructing *Listeria* flagella mutants by targeting flagellar structural and motor genes *fliG*, *fliF*, *flgC*, *flgK*, *fliM*, and *flhB*.

Accomplishments

We constructed five mutants by deleting basal body complex genes *flhB*, *fliG*, *fliM*, *fliF*, *flgC*. Scanning electron microscopy was utilized to determine presence or absence of flagella in the mutant strains (Fig. 1).

Significant Activities that Support Special Target Populations:

We expect to have a clear understanding of flagella and flagellar genes required for fish fillet attachment.

Technology Transfer:

None

International Cooperation / Collaboration

None

Publications:

None

Presentations:

None

Figure:

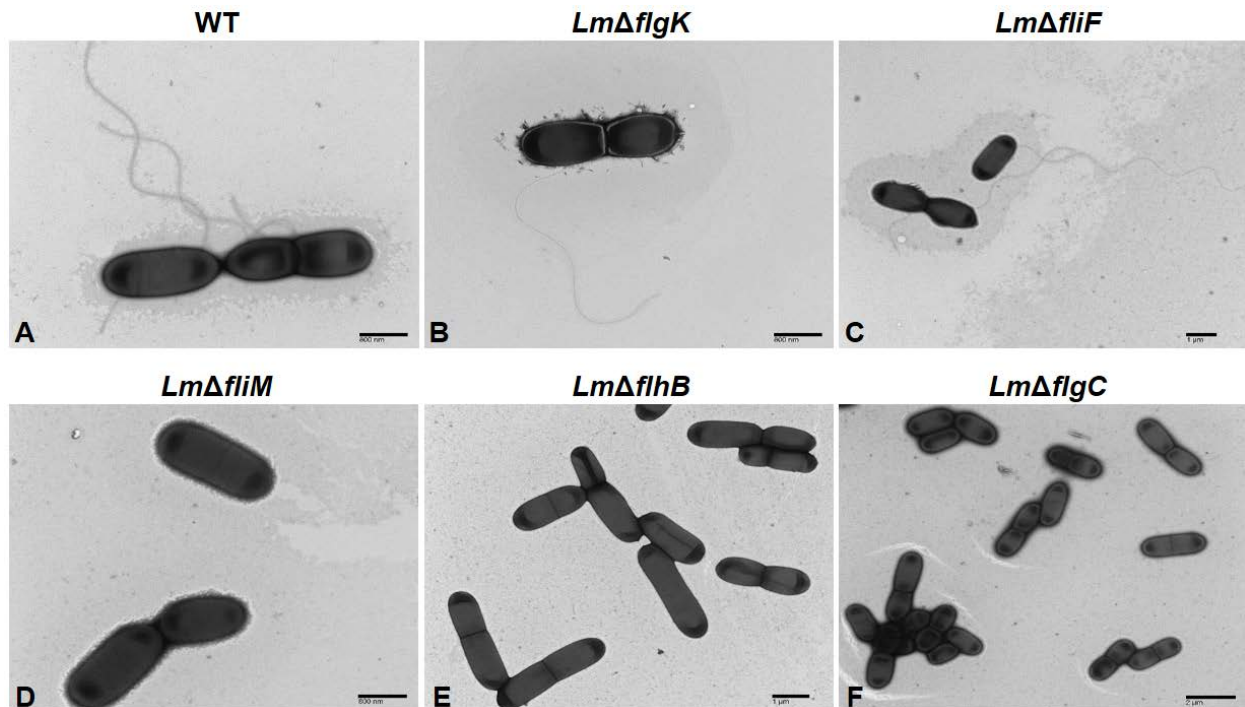


Fig. 1. Transmission electron microscopy of *L. monocytogenes* wild type and flagella mutants (negative staining; 1% Uranyl acetate, 30 s). (A) Wild type *L. monocytogenes* with numerous lateral flagella (bar = 800 nm); (B) *LmΔflgK* showed just one lateral flagella (bar = 800 nm); (C) *LmΔfliF* showed many lateral flagella (bar = 1 μm); (D, E, F) *LmΔfliM*, *LmΔflhB*, *LmΔflgC* without any flagella (d, bar = 800 μm; e, bar = 1 μm; f, bar = 2 μm).