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**Siderophore utilization in *Francisella tularensis* Live Vaccine Strain (LVS)**G. Ramakrishnan<sup>1</sup>, A. Meeker<sup>1</sup><sup>1</sup>University of Virginia, Medicine/Division of Infectious Diseases, Charlottesville, United States

Under conditions of iron-limitation, strains of *F. tularensis* secrete a siderophore whose production is dependent on the genes of the *fsl* operon which is highly conserved across the different strains. *fsIE* encodes a potential siderophore receptor that is essential for siderophore utilization in Type A strain SchuS4 and in *novicida* strain U112.

**Aims:** A study was undertaken to ascertain if the mechanism for siderophore utilization in the Live Vaccine Strain (LVS) of *F. tularensis* was similar to that in SchuS4.

**Methods:** An in-frame deletion was generated in the *fsIE* gene of LVS using a *sacB* suicide vector. Immunoblotting was used to test for presence of FslE in cell lysates of LVS, a *fur* mutant derivative of LVS and the *fsIE* mutant. The deletion mutant was tested for ability to grow in iron-limiting medium in liquid and on plates in paired comparison with the parent LVS. It was also tested for ability to produce and to utilize siderophore in a plate-based assay.

**Results:** We confirmed loss of the band corresponding to FslE in immunoblots of *fsIE* mutant lysates. Growth of the mutant was similar to parent LVS in iron-limiting medium. The mutant also produced siderophore and was able to utilize siderophore equally as well as the parent.

**Conclusions:** These studies indicate that FslE does not play a critical role in siderophore utilization by LVS. Although siderophore production is similar in LVS and SchuS4, alternate uptake mechanisms appear to be functional in the vaccine strain. Studies directed at identifying these mechanisms will assist in understanding if iron acquisition impacts virulence traits in *F. tularensis*.