

RORI SCHREIBER, LUKE D’CUNHA, & JOSEPH HORZEMPA. Department of Biological Sciences, West Liberty University, West Liberty, WV, 26074. A molecular biology approach to identify *Francisella tularensis* proteins that interact with Band 3 of human erythrocytes.

*Francisella tularensis* is a pathogenic gram-negative bacterium that causes the zoonotic disease Tularemia. In addition, *F. tularensis* is classified as a Class A Bioterrorism agent by the CDC due to the ease of aerosolization and the ability of this bacterium to cause fatal infection in low doses. Previous studies suggest that invasion of mammalian erythrocytes by *F. tularensis* increases colonization of ticks, an arthropod vector of this pathogen. Our laboratory previously found that the erythrocyte membrane glycoprotein, Band 3 is required by *F. tularensis* for invasion of red blood cells. Therefore, we predict that bacterial proteins interact with Band 3 to facilitate invasion. To identify these proteins, we have expressed the cytoplasmic domain of Band in *F. tularensis* LVS. Subsequent pull-down assays using the recombinant cytoplasmic domain of Band 3 as bait revealed four potential *F. tularensis* interacting proteins of 10, 15, 30, and 60 kD. A peptide mass fingerprint analysis will be used to identify these proteins. Further analysis will validate whether these proteins interact with Band 3 and if they are required for erythrocyte invasion. (Supported by NIH Grant P20GM103434 to the West Virginia IDeA Network for Biomedical Research Excellence).