Dr. Lutter's work on C. trachomatis

Dr. Lutter is an assistant professor within the Department of Microbiology and Molecular Genetics here at Oklahoma State University. I recently spoke with Dr. Lutter to discuss her current research which involves her investigating the role of a specific chlamydial protein during infection by utilizing a laboratory mouse model of genital infection. Dr. Lutter study and grant focuses on the role of calcium in host pathogens and their interaction of Pseudomonas aeruginosa. From Dr. Lutters research support her grant currently C. trachomatis is the most commonly reported bacterial infection in the United States and can lead to severe medical complications in women.

What is C. *trachomatis*

 Chlamydia trachomatis is the most commonly reported bacterial infection in the United States and can lead to severe medical complications in women. In the published journals Dr. Lutter provides insight on how the studies are conducted and what impacted the results of the study. Chlamydia trachomatis is the leading cause of bacterial sexually transmitted infections (STIs) and preventable blindness reported by the CDC (Shaw et. 2017).

The species is comprised of at least 15 different serovars A to C. When C. *trachomatis* goes untreated the asymptomatic infection may drive pelvic inflammatory disease, ectopic pregnancy, and infertility. The objective of Dr. Lutter study was to investigate whether the stages of chlamydial extrusions are shed in vivo following infection with multiple strains of Chlamydia.

Dr. Lutter Research on C. *trachomatis*

In the study, Dr. Lutter along with other researchers utilized and established certain methods that would help in the study. The methods used to monitor each stage are strategically listed (i) consisted of the time course of infection and mode of the host cell exit, (ii) mucosal and systemic immune response to infection, and the (iii) gross and histopathology following clearance of active infection. The key, in order to determine these stages within the study, was to first exploit the identification of chlamydial extrusions shed from the host cells in an *in vivo* model (Shaw et. 2017).

Sources

Shaw, J. H., Behar, A. R., Snider, T. A., Allen, N. A., & Lutter, E. I. (2017). Comparison of Murine Cervicovaginal Infection by Chlamydial Strains: Identification of Extrusions Shed In vivo. *Frontiers in Cellular and Infection Microbiology,* *7*. doi:10.3389/fcimb.2017.00018

Shaw, J. H., Key, C. E., Snider, T. A., Sah, P., Shaw, E. I., Fisher, D. J., & Lutter, E. I. (2018). Genetic Inactivation of Chlamydia trachomatis Inclusion Membrane Protein CT228 Alters MYPT1 Recruitment, Extrusion Production, and Longevity of Infection. *Frontiers in Cellular and Infection Microbiology,* *8*. doi:10.3389/fcimb.2018.00415