**Chlamydia: Smarter Than You Think**

Chlamydia trachomatis is the number one bacterial sexually transmitted infection- and it is a lot smarter than you would think.

Untreated this disease can cause pelvic inflammatory disease, ectopic pregnancy, and infertility. It has been proposed that chlamydia trachomatis spreads in the body in its own unique way. Instead of just invading a live cell, lysing (rupturing), and spreading the bacterial infection, chlamydia trachomatis actually uses the host cell that it invaded to make its own “invisible cloak”. Chlamydia invades a cell then uses the host cell to “split off” and make its own new “cell” called an extrusion. This extrusion uses the previous host’s cell membrane to wrap around all the chlamydia cells. This makes the infection of foreign bacteria invisible to the body’s immune system because it is cloaked in its own membrane. This makes it very easy for chlamydia to spread quickly without being detected. While this method of chlamydia spreading in the body has been proposed before, the team of Oklahoma State University’s Dr. Erika Lutter and Dr. Jennifer Shaw are the very first scientists to prove extrusion occurs in live animal tissue!

**The Team’s Methods**

 Oklahoma State University’s team proved extrusion by using live female mice. The mice were infected with chlamydia (while under a sedative- so they felt nothing). The infected mice were swabbed multiple days during the experiment. The extrusions were extracted and proven by using multiple stains: one stain that colored the chlamydia bacteria and another that stained the cell membrane of animal cells. This experiment proved chlamydia cells make their own cell using the host’s membrane. These extruded cells simply contain hundreds of chlamydia cells and no nucleus.

**Conclusion**

 The proof of how chlamydia trachomatis spreads in mice gives us a clue of how chlamydia is spreading in our human bodies. Chlamydia can spread so quickly because of its unique ability to create extrusions. Chlamydia, as explained by Dr. Lutter, is an “obligate intracellular pathogen” meaning it only lives in one way- inside human cells. Dr. Lutter pointed out the fascinating fact that chlamydia would not exist if it weren’t for humans. “If every single human were to be treated for chlamydia [trachomatis] simultaneously, there would be no more chlamydia”.

 Safe sex should always be practiced because the STI you could come in contact with is much smarter than you think.

**References:** Comparison of Murine Cervicovaginal Infection by Chlamydia Strains: Indentification of Extrusions Shed *In Vivo,* Authors: Jennifer H. Shaw, Amanda R. Behar, Timothy A. Snider, Noah A. Allen, and Erika I. Lutter Published: 3 February 2017