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LSUHSC RESEARCH DISCOVERIES SHED LIGHT ON COMMON STI

New Orleans, LA – Research led by David H. Martin, MD, Professor and Chief of Infectious Diseases at LSU Health Sciences Center New Orleans, has found that a common sexually transmitted infection-causing parasite “cultivates” bacteria beneficial to it, changing thinking about which comes first—infection or bacteria. The researchers also discovered a previously unknown species of these bacteria. The research was published ahead of print online in Advance Access in the *Journal of Infectious Diseases*, and was published online April 2, 2013 in Research Highlights in *Nature Reviews Urology*.

Trichomonas vaginalis is a parasite and is a common sexually transmitted infection (STI) in women where it causes vaginal discharge, a higher rate of premature deliveries, and greater susceptibility to infection with the AIDS virus. Many women have this infection and do not know it.

It is known that a change in vaginal bacteria causes a problem known as bacterial vaginosis, and women with this condition are at increased risk of acquiring a *trichomonas* infection. The researchers wondered if, among women with bacterial vaginosis, there were unique bacterial communities which would make women more susceptible to infection with *trichomonas*.

“We discovered that there are two unique bacterial communities that are very strongly associated with *trichomonas* infection,” notes Dr. Martin. “In part what is unique about these communities is high concentrations of bacteria known as mycoplasmas. In fact one of these is a completely unknown bacterium which we have named *Mnola* because it is a mycoplasma discovered in NOLA.”

The mycoplasma associated with the other unique bacterial community is *Mycoplasma hominis*, a well known bacterial pathogen. The data indicate that women with *trichomonas* and

this unique bacterial community suffer from worse disease than the other *trichomonas*-infected women. They have greater amounts of discharge and redness of the vaginal wall.

“We think that this group might also be at especially high risk for infection with HIV,” adds Dr. Martin.

An especially interesting result of this research is that the evidence suggests that the *trichomonas* parasite is responsible in some way for the appearance these unique mycoplasma dominated bacterial communities.

“So instead of these unique communities predisposing a woman to infection as originally thought, we now believe that *trichomonas* takes on the role of a farmer in the vaginal environment by cultivating bacterial communities that are in some way beneficial to itself. Proving this hypothesis and figuring out how these bacteria interact with *trichomonas* will be the subject of future research,” concludes Dr. Martin.

Other members of the LSUHSC research team included Marcela Zozaya, Rebecca Lillis, M. Jacques Nsuami, and Michael J. Ferris from the Section of Infectious Diseases in the Department of Medicine, the Department of Microbiology, Immunology & Parasitology, the Department of Pediatrics, and the Research Institute for Children.

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