Medical Xpress

Mice help researchers understand chlamydia

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Genetically engineered mice may hold the key to helping scientists from Queensland University of Technology and Harvard hasten the development of a vaccine to protect adolescent girls against the most common sexually transmitted disease, Chlamydia.

Dr Michael Starnbach from Harvard Medical School is in Australia to work with QUT on a joint research project using a "mouse model" to study how the immune system responds to infections such as Chlamydia.

"Ultimately the idea is to understand enough about how Chlamydia interacts with cells and how the immune system responds to those infected cells, to be able to understand which components of the immune system need to be stimulated to fight the Chlamydia infection," Dr Starnbach said.

"At Harvard we have been working on the basic biology of how the immune fighter cells known as T-cells respond to infection.

"When a person is infected with Chlamydia, the organism enters into the outermost cells of the genital tract and stays there and replicates within those cells.

"Once they're hidden within the cells, only the T-cells can recognise that the cells are infected.

"T-cells are able to recognise cells that are infected and destroy those cells, ultimately eliminating the organism from the body."

Dr Starnbach said the mouse model being developed by QUT and Harvard would see mice genetically engineered with T-cells that were specifically directed to protect against the mouse strain of Chlamydia.

"In doing this we will be able to learn things about what is involved in protecting mice against Chlamydia infection and then mimic those responses with vaccines," he said.

Professor Peter Timms along with Professor Ken Beagley, from QUT's Institute of Health and Biomedical Innovation, are heading a QUT research team working with Dr Starnbach.

"QUT has already identified certain proteins that may be able to be incorporated into vaccines to protect against Chlamydia infection," Professor Timms said.

"We've been testing these proteins and, by working with Harvard, we hope to build on this research."

Professor Timms said, with rates of Chlamydia infection in some Australian communities as high as 12 per cent of the female population, there was a "real need" to develop a vaccine.

"Chlamydia is the most common sexually transmitted disease in the world and results in infertility in women and long-term chronic pelvic pain," he said.

"There are antibiotics to treat Chlamydia, but there's no vaccine to prevent it. In many cases women don't know they are infected because there are not really any physical signs or symptoms, so by and large they don't get treatment."

Source: Queensland University of Technology