

Aussie researchers find protein link to STI susceptibility

20 March 2013 | News | By BioSpectrum Bureau



Singapore: Australia's Monash Institute of Medical Research scientists have found a protein in the female reproductive tract that protects against sexually transmitted diseases (STIs) such as chlamydia and herpes simplex virus (HSV).

It is estimated that 450 million people worldwide are newly infected with STIs each year. Chlamydia has the highest infection rate of all the STIs reported in Australia. The research, published in *Science*, was led by Prof Paul Hertzog, director of MIMR's Centre for Innate Immunity and Infectious Diseases, and his team including, Ka Yee Fung and Niamh Mangan.

The team discovered a protein, which they called Interferon epsilon (IFNe), and showed it plays an important role in protecting females against infections. It could have clinical potential to determine which women may be more or less susceptible to disease such as STIs or to boost protective immunity. IFNe could also be used potentially to treat STIs or other inflammatory diseases.

"One way this protein is unusual is because of the way it's produced," Prof Hertzog said. "Most proteins protecting us against infection are produced only after we're exposed to a virus or bacteria. But this protein is produced normally and is instead regulated by hormones so its levels change during the oestrous cycle (an animal's menstrual cycle) and is switched off at implantation in pregnancy and at other times like menopause."

Prof Hertzog said: "Some of these times when normal IFNe is lowest, correlate with when women are most susceptible to STIs so this might be an important link to new therapeutic opportunities - IFNe follows different rules to normal immunomodulatory proteins, and therefore this might also be important to vaccines and the way they're formulated to boost our protective immunity. Since this protein boosts female reproductive tract immune responses, it's likely, although we haven't addressed it directly, that this finding will be important for other infectious diseases like HIV and HPV and other diseases."

Prof Hertzog said STIs are a critical global health and socioeconomic problem.

According to the 2011 Australian Bureau of Statistics, chlamydia has the highest infection rates of the notifiable STIs, and infection rates have more than tripled over the past decade. Men and women in the 15-19 years age group saw the largest increase in infection rates. According to these statistics, chlamydia affects more women than men, with 46,636 women aged over 15 diagnosed compared with 33,197 men aged 15 and over.