MEDIA RELEASE

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New discovery in Herpes Simplex Virus infection route

Researchers from the University of Sydney have made a major breakthrough in identifying how skin cells are infected with the Herpes Simplex Virus (HSV), a discovery which may have significant implications for a vaccine finally being available for the virus.

The paper is published in the *Journal of Immunology* and can be viewed at: [http://www.jimmunol.org/cgi/reprint/jimmunol.0904106v1](http://www.jimmunol.org/cgi/reprint/jimmunol.0904106v1)

Lead investigator, Associate Professor Cheryl Jones said HSV was a medically- significant virus that caused devastating disease throughout life for sufferers.

"Herpes simplex virus is the virus that causes cold sore, genital herpes, serious brain disease and newborn infections," she said.

"The skin represents a major entry point; therefore understanding how immune cells behave during the infection is of vital importance to researchers trying to find a cure for HSV.

"HSV infection of the skin and genital mucosa are important for the promotion and transmission of HIV, the virus that causes AIDS."

Associate Professor Jones said the research was the result of a joint collaboration between the Sydney Medical School, Kids Research Institute at Children’s Hospital at Westmead, the Centenary Institute and the Westmead Millennium Institute.

"We used fluorescent viruses and mice in which immune cells were tagged with green fluorescent protein to study how the HSV virus affects immune cells after it enters the skin," she said.

"We found that HSV can infect Langerhans cells, the immune cell in the top layer of the skin, but instead of making them exit the skin to the Lymph nodes to switch on a stronger immune response, they become sticky and die. Other types of immune cells deeper in the skin appear to be more important in this regard.

"We also showed for the first time that gamma delta T cells in the skin can be infected with HSV very soon after infection.

"We are still investigating what effect they have, but together this work provides important information for developing topical micro-bicides and vaccines against the viruses.

"Potentially, we may be on the right track for a new discovery."

The research was supported by a National Health and Medical Research Council Project Grant.
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Kids Research Institute is the research arm of The Children’s Hospital at Westmead, the largest paediatric centre in NSW, providing the most advanced care and treatment options for children from NSW, Australia and across the Pacific Rim.

Established in 1880, The Children’s Hospital at Westmead is a stand-alone public Hospital and registered charity with 3,000 staff working in 150 departments. Over 60,000 sick children and their families are cared for each year in a family-focused, healing environment.

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