

Akiko Iwasaki named HHMI investigator

Yale UniversityYale University



Yale immunobiologist Akiko Iwasaki has been selected as a Howard Hughes Medical Institute (HHMI) investigator, one of the most prestigious designations in biomedical science.

She was one of 27 of the nation's top researchers to receive this honor, which recognizes their work and gives them the support necessary to move their research forward in new directions.

Iwasaki's body of research addresses the mechanisms of innate recognition of viruses and the initiation of antiviral immunity. Her lab focuses on sites where a virus encounters mucosal surfaces. Until now, most efforts to develop vaccines have focused on the immune system's antibodies, or T cells, circulating through the body. But efforts to harness these circulating T cells have not been effective in organs such as the vagina, intestines, lung airways, and central nervous system, which restrict the entry of these "memory" T cells.

In a study recently published in *Nature*, Iwasaki's team developed a new model for vaccination against genital herpes, a disease for which there is no effective immunization and no cure. The researchers focused on peripheral tissue in the female genital tract, where viral exposure occurs.

Akiko Iwasaki named HHMI investigator

Published on Electronic Component News (<http://www.ecnmag.com>)

Working with mice, they explored a two-part vaccine strategy they call “prime and pull.” The “priming” involves conventional vaccination to elicit a system-wide T cell response. The “pulling” involves recruitment of activated T cells directly into the vaginal tissue, via topical application, of chemokines — substances that help mobilize the immune cells.

They found that the recruited T cells were able to establish a long-term niche and offer protective immunity against genital herpes by reducing the spread of HSV into the sensory neurons.

Other research by Iwasaki, published in the Proceedings of the National Academy of Sciences, showed that, following influenza infection, commensal microbiota composition (the relationship among bacteria in the gut) critically regulates the generation of the immune response’s virus-specific CD4 and CD8 T cells and antibody responses. Her results revealed the importance of commensal microbiota in regulating immunity in the respiratory mucosa through the proper activation of inflammasomes.

Iwasaki, a professor of immunobiology and of molecular, cellular and developmental biology, hopes her new HHMI designation can help advance her research into antiviral immunity.

“Funding from the HHMI will enable my lab to pursue questions that are risky but potentially very rewarding,” she said. “We will be able to understand the types of immune responses generated by sensing different levels of danger associated with infections, and to determine how the bacteria and viruses that inhabit our body influence the immune system. Ultimately, we hope to design vaccines that effectively prevent diseases caused by viruses that enter through mucosal sites.”

For more on HHMI’s mission and to see the full list of new HHMI investigators, visit the [website](#) [1].

Source URL (retrieved on 09/23/2014 - 11:32pm):

<http://www.ecnmag.com/news/2013/05/akiko-iwasaki-named-hhmi-investigator>

Links:

[1] <http://www.hhmi.org/news/20130509.html>