

Researchers uncover essential interaction between malaria parasites and liver cells

November 26 2015



Liver stage with Actin. Credit: Center for Infectious Disease Research

Scientists at the Center for Infectious Disease Research recently uncovered a critical piece in the puzzle of how malaria parasites infect their host. The work, recently published in *Science Magazine*, reveals the details of how the malaria parasite invades its initial target organ, the liver. Without infection of the liver, the parasites cannot multiply or spread to the blood. Infection of the blood causes illness, spread of the disease, and, ultimately, death.

"This [discovery](#) is significant because it reveals a vital interaction between the malaria parasite and the person it infects. Before, we knew little about that interaction. The molecular details of our discovery will facilitate the design of new drugs and new vaccines," said Alexis Kaushansky, PhD, an assistant professor at the Center for Infectious Disease Research.

The discovery was made through collaborative research between the laboratories of Drs. Stefan Kappe, PhD, Noah Sather, PhD, and Alexis Kaushansky, PhD. The combination of cross-disciplinary, collaborative research and technological approaches has allowed this type of discovery to be possible. As Louis H. Miller, Head of Malaria Cell Biology Section at the National Institutes of Health notes, "The findings on the liver receptor EphA2 for [malaria parasite](#) sporozoite invasion of [liver](#) cells is a critically important advance and might allow us to devise new strategies to block parasite infection."

The Center has pioneered the systems biology approach to research, which utilizes state-of-the-art technology, fosters collaboration between scientists, and allows for a comprehensive understanding of the interactions between pathogens and their hosts. This method provides an

essential path the transformative advances needed to prevent and treat the world's deadliest infectious diseases.



A scientist at Center for Infectious Disease Research dissects malaria infected mosquito. Credit: Center for Infectious Disease Research

The full manuscript detailing the researchers' findings titled "Malaria parasites target the hepatocyte receptor EphA2 for successful host infection," was published in the November edition of *Science* magazine.

More information: "Malaria parasites target the hepatocyte receptor EphA2 for successful host infection" [www.sciencemag.org/lookup/doi/..._1126/science.aad3318](http://www.sciencemag.org/lookup/doi/10.1126/science.aad3318)

Provided by The Center for Infectious Disease Research

Citation: Researchers uncover essential interaction between malaria parasites and liver cells (2015, November 26) retrieved 26 April 2024 from <https://medicalxpress.com/news/2015-11-uncover-essential-interaction-malaria-parasites.html>

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