

SINGAPORE RNA SEMINAR SERIES

A ROLE FOR THE RNA MODIFICATION M6A AT THE VIRUS-HOST INTERFACE

About the seminar

RNA-based regulation of viral RNA genomes plays a fundamental role in their infection. We have previously found that the RNA modification N6-methyladenosine (m6A) regulates infection by positive-strand RNA viruses in the Flaviviridae family, including hepatitis C virus (HCV). Importantly, we have identified roles for m6A, as well as m6A-machinery proteins, in acting directly on either cellular and viral RNA to regulate infection. For HCV, m6A acts on the viral RNA to regulate interactions with RNA binding proteins that control specific stages of the viral lifecycle. Interestingly, the HCV lifecycle takes place solely in the cytoplasm, while m6A addition on cellular mRNA takes place in the nucleus. Thus, the mechanisms by which m6A is deposited on the HCV RNA have been unclear. This talk will describe new factors that regulate the deposition and function of m6A on HCV RNA. Ultimately, a detailed understanding of the interactions at the m6A interface will uncover novel strategies to develop antiviral therapies to target this RNA regulatory control that impacts RNA virus replication.



Stacy Horner
Associate Professor,
Duke University



16 October 2023 (Monday)
9 am (SGT, GMT+8)



[Via Zoom](#)



About the speaker

Dr. Stacy M. Horner is currently an Associate Professor in the departments of Integrative Immunobiology and Medicine at the Duke University School of Medicine. She is also the Director for the Duke Center for RNA Biology. Stacy received her Ph.D. in 2007 from Yale University under the mentorship of Dr. Daniel DiMaio. Her postdoctoral research, sponsored by Irvington Institute Fellowship Program of the Cancer Research Institute, was with Dr. Michael Gale at the University of Washington. She started her independent lab at Duke in 2013. Research in her laboratory is defining the virus-host interactions that control the outcome of infection to viruses in the Flaviviridae family, including hepatitis C, Dengue, and Zika virus. Her lab studies the molecular mechanisms (1) that regulate RNA-activated antiviral innate immunity to these viruses, (2) how these viruses replicate, and (3) the RNA regulatory controls to both immunity and viral infection, with a focus on the RNA modification N6-methyladenosine. Stacy has received the Ann Palmenberg Junior Investigator Award from the American Society for Virology, the ASM Microbe Junior Investigator Award, both the Milstein Young Investigator Award and the Christina Fleischmann Award from the Cytokines Society, as well as the Burroughs Wellcome Fund Investigator in the Pathogenesis of Infectious Disease award.

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