



MMI 291 Seminar Series

Current Theme: Interdisciplinary Research
Fall Quarter 2021 – CRN 41611

Friday Seminar – 12:10-1 PM



“TRIMming the host interferon response: the role of ubiquitination in ZAP antiviral mechanism”

Research / Bio

My lab studies the host innate immune response to medically relevant mosquito-borne viruses such as alphaviruses and flaviviruses. Cellular sensing of viral pathogens triggers interferon (IFN) production and signaling, leading to expression of a wide array of IFN-stimulated genes (ISGs). However, the antiviral mechanisms of many of these ISGs are not fully characterized. In particular, zinc finger antiviral protein (ZAP) targets diverse viruses by recognition of CG dinucleotide, recruitment of cellular RNA decay machineries, and suppression of viral translation. We found that ZAP co-opts the host ubiquitination pathway to block viral translation, and some alphaviruses have evolved strategies to evade ZAP. Understanding how cellular and viral processes modulate ISG antiviral function will shed light on the molecular mechanisms driving viral virulence and pathogenesis.

Publications

Emily Yang, and **Melody M. H. Li** All About the RNA: Interferon-Stimulated Genes That Interfere With Viral RNA Processes *Frontiers in Immunology*. Dec 2020

Anh Phuong Luu, Zhenlan Yao, Sangeetha Ramachandran, Stephanie A. Azzopardi, Linde A. Miles, William M. Schneider, H.-Heinrich Hoffmann, Leonia Bozzacco, Gustavo Garcia, Jr, Danyang Gong, Robert Damoiseaux, Hengli Tang, Kouki Morizono, Charles M. Rudi, Ren Sun, Vaithilingaraja Arumugaswami, John T. Poirie, Margaret R. MacDonald, Charles M. Rice and **Melody M. H. Li**. A CRISPR Activation Screen Identifies an Atypical Rho GTPase That Enhances Zika Viral Entry *Viruses* 2021, 13, 2113. <https://doi.org/10.3390/v13112113>.

Li MMH, Lau Z, Cheung P, Aguilar EG, Schneider WM, Bozzacco L, et al. TRIM25 Enhances the Antiviral Action of Zinc-Finger Antiviral Protein (ZAP). *PLoS Pathog* 2017 13(1):e1006145. doi:10.1371/journal.ppat.1006145

Dec
3



Melody Man Hing Li, PhD
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Johanna and Joseph H. Shaper
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University of California Los Angeles, CA

Dec 3, 2021
12:10 – 1 PM
ZOOM Meeting

Medical Microbiology
& Immunology
School of Medicine

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We hope to see you there!