Quantifying the role of resident memory CD8 T cells in preventing respiratory virus transmission

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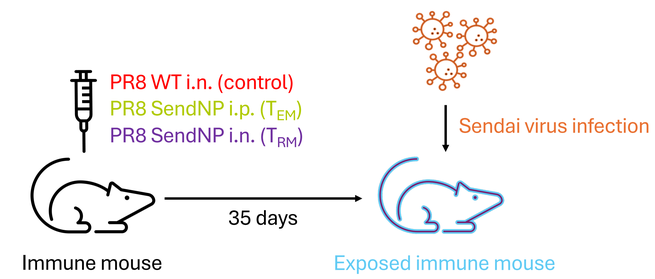
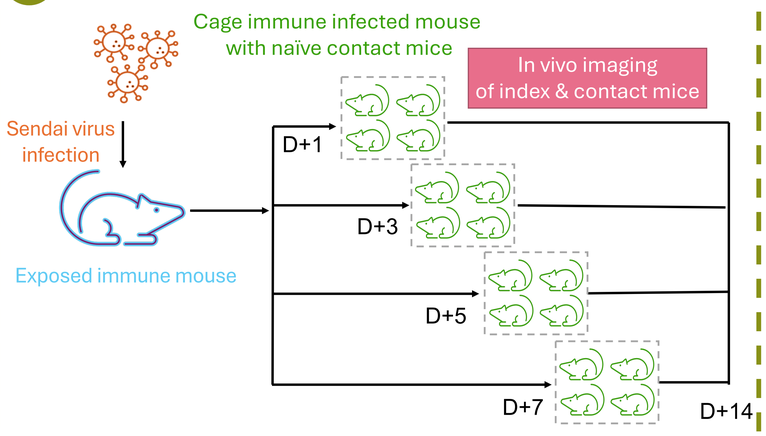
- Current vaccines against respiratory virus infections mainly generate antibody responses
- Antigenic evolution of respiratory viruses against the antibodies necessitates frequent vaccine update
- Unlike virus epitopes targeted by vaccine induced antibodies, epitopes targeted by CD8 T cells are mostly conserved

Can CD8 T cells in the respiratory tract limit transmission in the absence of antibodies?

1 Infection of immune mice

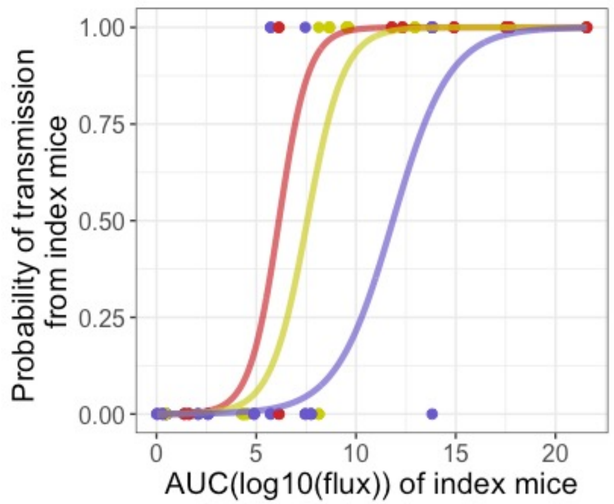


2 Transmission from infected immune mice to naïve contact mice

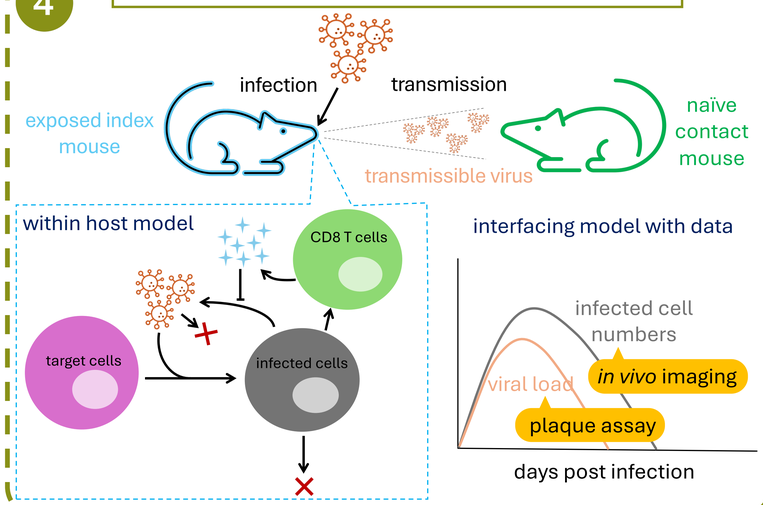


Resident memory CD8 T cells in the respiratory track might modify host infectiousness for onward virus transmission

3 Transmission probability depends on host immune status



4 Linking within host viral dynamics and between host transmission



1. Ida Uddbäck, Sarah E Michalets, Ananya Saha, Cameron Mattingly, Kirsten N. Kost, M. Elliott Williams, ..., Jacob E. Kohlmeier, 2024, *Nature* 626, 392 – 400

2. Crystal W. Burke, John N. Mason, Sherri L. Surman, Bart G. Jones, Emilie Dalloneau, Julia L.Hurwitz, Charles J. Russell, 2011, *PLoS Pathogens*, 7, e1002134

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