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Talk title:

Antiviral Immune Response and the Route of Infection in *Drosophila melanogaster*

The RNAi pathway is considered the major antiviral response in insects. However, the use of different modes of infection (oral vs. injection) reveals a substantial contrast in the antiviral immune response initiated upon infection. Following oral exposure of *Drosophila* to different RNA viruses we demonstrate that: (i) viral infections persist or are cleared at the adult stage; (ii) RNAi is not essential to clear viral infections or to reach persistence; (iii) infection leaves a trace in the host under a vDNA form even after clearance; (iv) flies orally exposed to the virus as larvae are protected from lethality to future reinfection by injection when they become adults; and (v) transstadial immune priming is RNAi-dependent, virus and sequence specific. By revealing the fundamental difference between virus injection and oral infection, probably the most common route of infection in nature, our work opens a new avenue for the study of antiviral immune responses in insects and other invertebrates.