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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.