

Investigate Sensory Mutant Behavior



To explore how different senses contribute to fly behavior, you can compare normal (wild type) animals to ones that lack a specific sense. These animals have a mutation in a gene that is key for developing a given sense, and they therefore don't develop that sense correctly. Fly researchers have made these mutants available to the general community by submitting them to Bloomington Drosophila Stock Center - a big library of experimental flies that offers live stocks for purchase. Below are some mutants you can order from Bloomington to investigate sensory mutant behavior for yourself.

Get Started

<https://bdsc.indiana.edu/> (home - from here you can sign up for a Bloomington account to place orders and search for any flies by keyword or specific ID number)

Some Mutants to Consider

BDSC 23130 - Orco mutant; anosmic mutant flies (can't smell)

<https://bdsc.indiana.edu/Home/Search?presearch=23130>

BDSC 41737 - Ir25a mutant; many taste functions may be affected. Documented effect on female fly's preference to lay eggs on food containing acetic acid. Therefore, Ir25a is likely involved in acid (sour) sensing.

<https://bdsc.indiana.edu/Home/Search?presearch=41737>

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5680077/>



BDSC 51309 - Ir76b mutant; many taste functions may be affected. Documented effect on female fly' preference to lay eggs on food containing acetic acid. Therefore, Ir25a is likely involved in acid (sour) sensing.

<https://bdsc.indiana.edu/Home/Search?presearch=51309>
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5680077/>

BDSC 25779 - Mutant for the neurodevelopmental gene, *ato*, involved in specifying key structures in both the visual and auditory systems. Therefore, *ato* mutant flies are largely blind and deaf.

<https://bdsc.indiana.edu/Home/Search?presearch=25779>

BDSC 24776 - *ninaB* ^{-/-} - Functionally blind, because photoreceptors fail to develop.

<https://bdsc.indiana.edu/Home/Search?presearch=24776>

Dissections

It is also relatively easy (with a magnifying glass or [photographer's loupe](#), a razor blade, and some manual dexterity) to surgically remove the wings and various legs segments from flies. Other organs such as the arista and labellum might be more challenging, but can also be surgically removed under a dissecting microscope. (The photographer's loupe is very cheap and small and could be an alternative to a more expensive dissecting scope.)