

Video Article

Visualization of larval segmental nerves in 3rd instar *Drosophila* larval preparations

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Abstract

Drosophila melanogaster is emerging as a powerful model system for studying the development and function of the nervous system, particularly because of its convenient genetics and fully sequenced genome. Additionally, the larval nervous system is an ideal model system to study mechanisms of axonal transport as the larval segmental nerves contain bundles of axons with their cell bodies located within the brain and their nerve terminals ending along the length of the body. Here we describe the procedure for visualization of synaptic vesicle proteins within larval segmental nerves. If done correctly, all components of the nervous system, along with associated tissues such as muscles and NMJs, remain intact, undamaged, and ready to be visualized. 3rd instar larvae carrying various mutations are dissected, fixed, incubated with synaptic vesicle antibodies, visualized and compared to wild type larvae. This procedure can be adapted for several different synaptic or neuronal antibodies and changes in the distribution of a variety of proteins can be easily observed within larval segmental nerves.

Disclosures

No conflicts of interest declared.