Neuro Test

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To understand the molecular mechanisms involved in the onset and progression of neurodegenerative diseases aiding the discovery of new therapeutical targets, it is crucial to perform in vivo studies in whole organisms. The fruit fly, Drosophila melanogaster, is a practical and powerful model organism that has been used in biomedical research for over a century, including to study pathologies such as Parkinson's disease. Although the D. melanogaster larval stage is most sensitive to the action of drugs and neuromodulators with more easily identifiable behaviors, behavioral assays rely mainly on the adult stage. Indeed, larvae are seldom used due to their body translucency which hinders detection using automated video analysis softwares. To improve larva detectability, we developed the Neuro Test, a novel assay based on a transillumination system validated through laboratory tests on larvae. Our data supports that Neuro Test greatly increases larval contrast facilitating detection compared to any other system previously published. This highly adaptable and inexpensive tool improves the reliability and sensitivity of larval behavioral automated analyses. This is of great value to the research community already evoking the interest of partner organizations to develop this technology.

Awards Won: