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Science

In the last decade, several models to study the mechanisms involved in Alzheimer's disease progression have been developed in *Drosophila melanogaster*. Among the two well characterized neuropathological features present in human Alzheimer brains (Tau filaments and amyloid deposition), I specifically study the process of human Tau-induced neurodegeneration. It has been shown that human Tau expression in *Drosophila* induced neurodegeneration through neuronal postmitotic cell cycle re-entry and cellular death. However, a forward genetic screen performed in the laboratory by a former PhD student identified genes involved in developmental cell cycle regulation as the main category of genes affecting Tau induced neurodegeneration. Thus, we investigate in more detail cell cycle progression upon human Tau expression. For this, we are using the well characterized *Drosophila* larval brain model to show the presence of aneuploidy progenitor cells upon human Tau expression. Furthermore, we observed an abnormal mitotic progression characterized by the presence monopolar spindles. Taking together, these results suggested a potential developmental effect of Tau during adult neurodegeneration. In addition, I am involved in a genetic screen based on results from a pharmaceutical consortium to identified enhancer and suppressor of Tau phenotype with the final aimed to characterize the main biological processes associated with Tau-mediated neurodegeneration.

Publications

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