Defects in astrocyte production in mir-31a mutants unveil glial homeostasis in the adult Drosophila brain

Abstract:

The study of adult neural cell production has concentrated on neurogenesis. Yet, the mechanisms controlling adult gliogenesis are still poorly understood. I show that there is not only adult gliogenesis, but that the brain has a homeostatic mechanism by which it can detect the number of glia in the brain and in conditions where there are fewer glia, the neural progenitor cells are reactivated to produce more glia to compensate for the loss. Additionally, I have identified a population of neural progenitor cells in the adult Drosophila melanogaster brain that are characterised by their expression of the microRNA, mir-31a. mir-31a mutants exhibit defects in gliogenesis in the adult due to failure to regulate the expression of a predicted ubiquitin ligase.

Speaker :

Dr Lynette Caizhen Foo

Adjunct Lecturer
Department of Anatomy
National University of Singapore
Singapore 117594

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DEPARTMENT OF ANATOMY

Address enquiries to Dr Hu Qidong at 66013730 or Ms Carolyne Ang at 65163200. All are welcome.