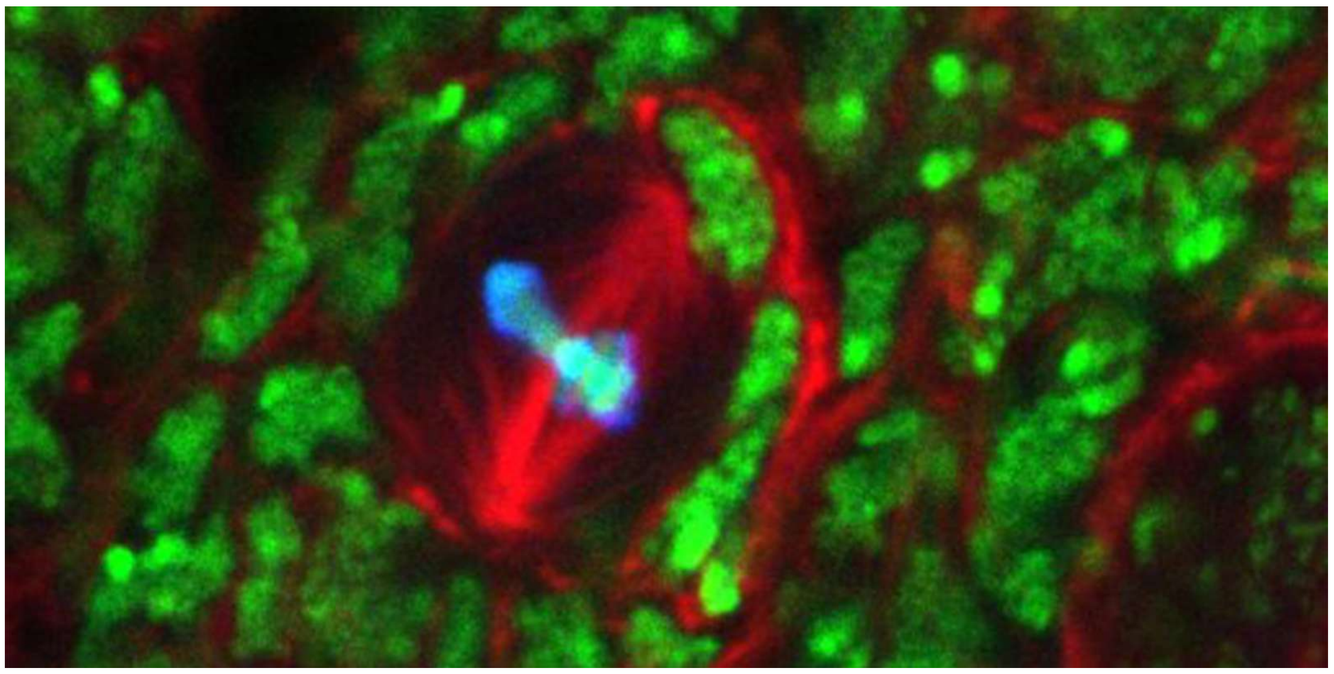
Small brains in flies



A neural stem cell in mitosis DNA (green), Tubulin (red), phospho-Histone 3 (blue). Image by Rohan Chippalkatti.

Microcephaly is a rare neurodevelopmental disease that leads to reduced brain size. The disease can have numerous causes such as an infection by the infamous Zika virus or also the inheritance of genetic factors. The Egger group in the Department of Biology at University of Fribourg studies those genetic factors in the fruitfly *Drosophila melanogaster*. It turns out that many of these factors control mechanisms involved in neural stem cell division and proliferation. Misregulation of these mechanisms during fly brain development can lead to reduced brain growth or, conversely, to tumorous overgrowth.

In collaboration with Rohan Chippalkatti and Beat Suter from the Institute of Cell Biology at the University of Bern, they have just published their latest research in the journal of ***PLOS Genetics*.** The results show that the protein Mms19 has a crucial function in promoting mitotic spindle assembly and orientation as well as astral microtubule growth and stability.

Dr Boris Egger explains the discovery: "We show that in the fly model system impaired function of Mms19 leads to delays in cell cycle progression of neural stem cells. The novel molecular insights might contribute to the better understanding of diseases that cause abnormal brain growth as observed in microcephaly."

Link to the PLOS Genetics publication

This is a collaborative work with Rohan Chippalkatti and Beat Suter from the Institute of Cell Biology and the University of Freiburg.

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