pHighting for Survival: How Tumours Adapt to Stress

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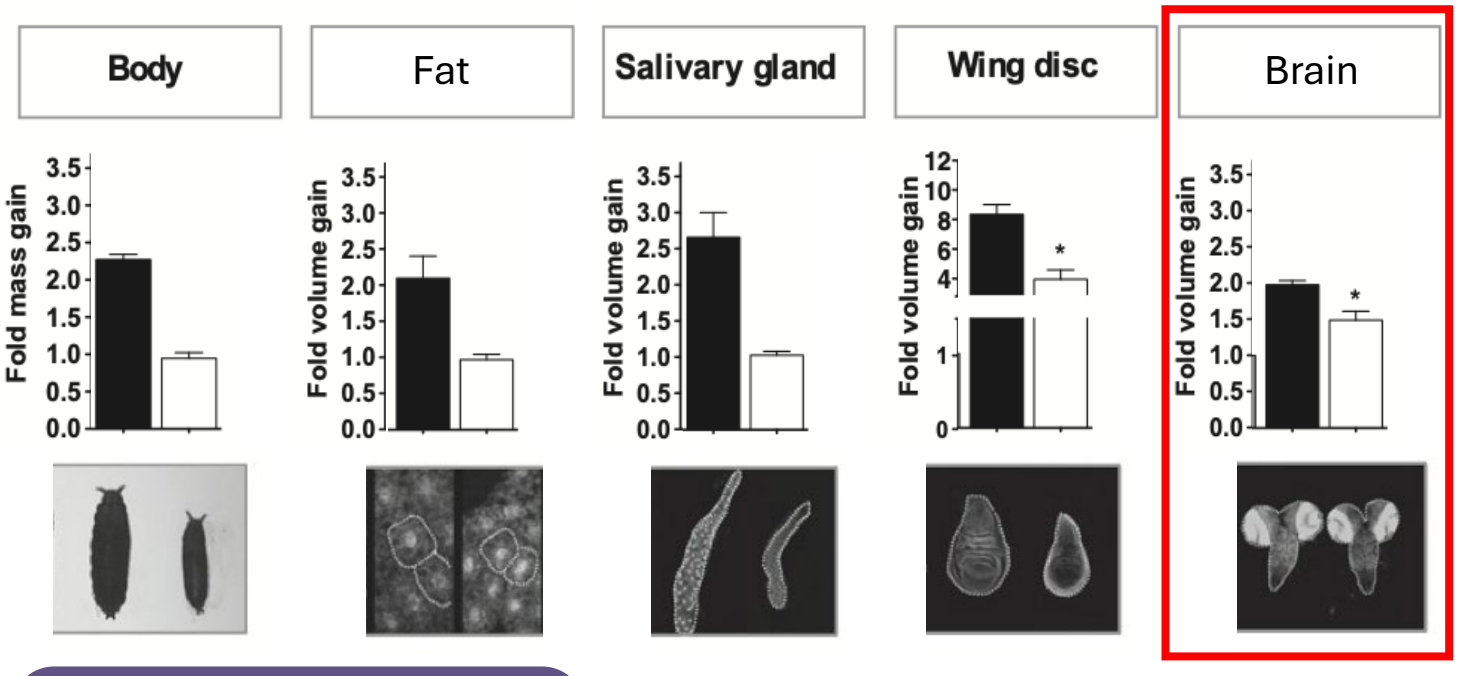
citizens of science

Background

How does nutrient restriction alter the growth of different organs in the body?



Key:
- Black bar = normal diet
- White bar = no nutrients

The brain is allowed to continue growing during nutrient stress.

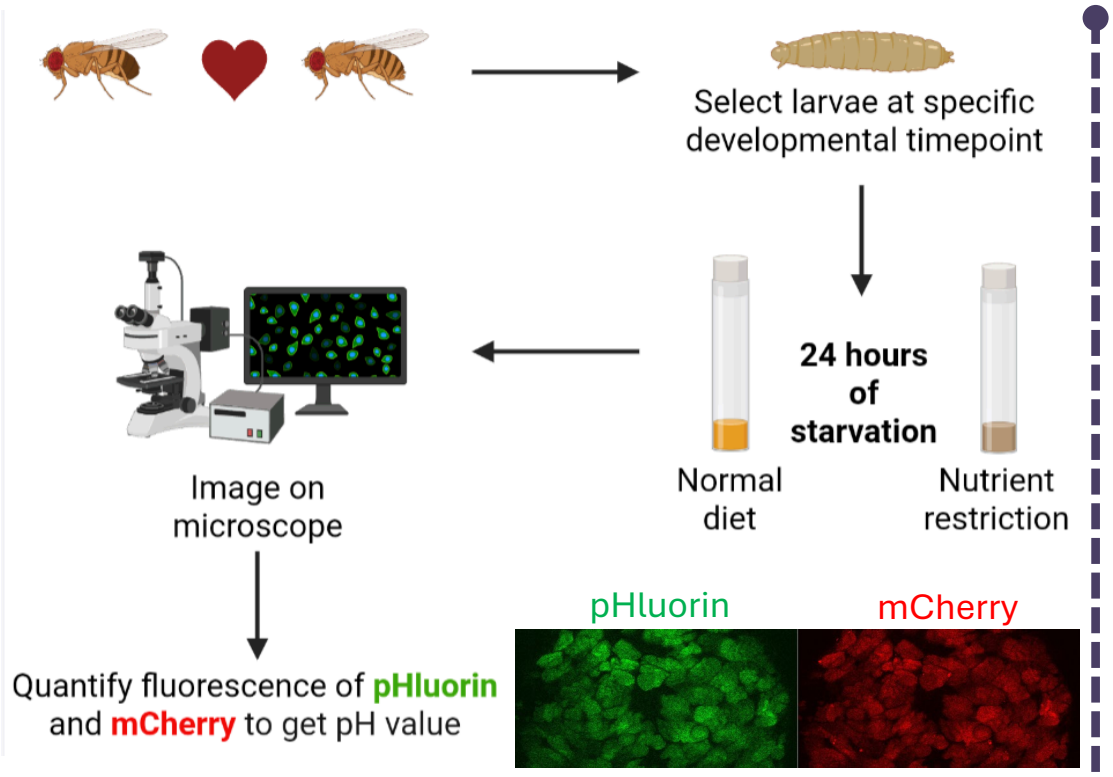
(Cheng et al., 2011)

Aim & Hypothesis

AIM: To investigate whether the pH of different cells within the brain changes when nutrient availability is altered.

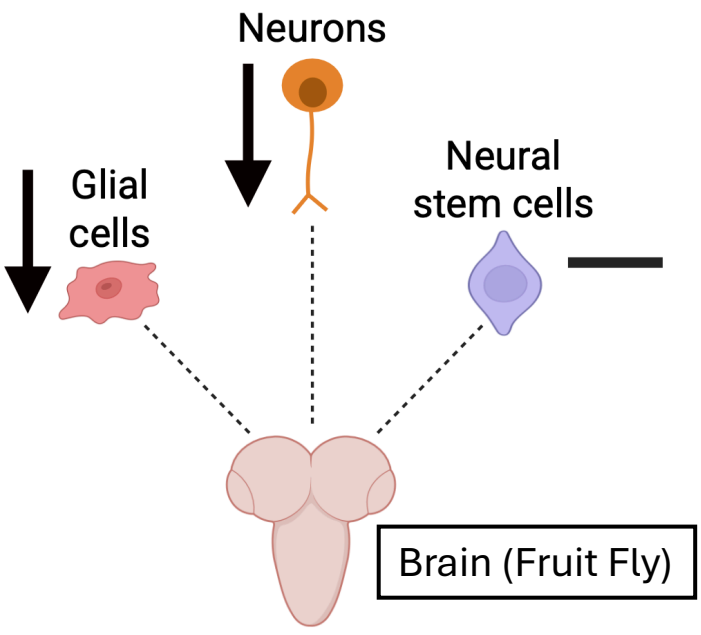
HYPOTHESIS: We think that when cells experience an environmental stress, the pH changes and certain signalling pathways are turned on/off to promote tumour formation.

Method



Results

pH doesn't change in neural stem cells when there are no nutrients



Key Takeaways

- The brain cells are protected when there are no nutrients.
- The pH of neural stem cells ***might*** be protected when there are no nutrients
- A question: Is the manipulation of pH during nutrient stress unique to brain cells?

Cheng, L et al. (2011). Anaplastic Lymphoma Kinase Spares Organ Growth During Nutrient Restriction in *Drosophila*. Cell *146*