

Title

Systemic responses to neuronal and glial mitochondrial stress in *Caenorhabditis elegans*.

Goal: To investigate how mitochondrial dysfunction in neurons affects stress responses in other tissues and influences organismal physiology.

Objectives

- Characterise mitochondrial stress responses in peripheral tissues following neuronal or glial mitochondrial perturbation.
- Analyse fluorescent reporters of mitochondrial stress in different tissues.
- Explore links between neuronal or glial stress signalling and organismal proteostasis.

Methods:

- Maintenance and genetic manipulation of *C. elegans* strains.
- Fluorescence microscopy to monitor stress reporters in different tissues.
- Behavioral assays to test nervous system function.

Student profile:

Ideal for students interested in neurobiology, aging, and microscopy techniques. No prior experience required.

Research line

Our research investigates how mitochondrial dysfunction in the nervous system influences organismal physiology. Using *Caenorhabditis elegans*, we study how neurons and glial cells communicate under mitochondrial stress and how these interactions shape systemic stress responses and ageing. We are also interested in understanding how these mechanisms may influence proteostasis and vulnerability in models of neurodegenerative disease.

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