

## C. elegans genetics

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### SCOPE OF THE METHOD

<b>Alternative method relates to</b>	Animal health, Human health
<b>Alternative method is situated in</b>	Basic Research
<b>Type of alternative method</b>	In vivo
<b>This method makes use of</b>	Animal derived cells / tissues / organs
<b>Used species</b>	Caenorhabditis elegans
<b>Targeted organ system or type of research</b>	Neuromuscular system, hypoderm, longevity.

### DESCRIPTION

#### Method keywords

invertebrate

C. elegans

genetic screen

pharmacological screen

Genetics

calcium imaging

#### Scientific area keywords

neuroscience

ageing

parasitology

### **Method description**

The lab routinely use *C. elegans* culture as genetic model. We explore the development and the ageing of the neuromuscular system. The methods used regularly in our lab include molecular biology, generation of transgenic animals or mutants, crossings, genetic screen, calcium imaging, fluorescence imaging, comprehensive quantification of the worm locomotion in response to specific cues, survival curves, molecular biology.

### **Lab equipment**

#### **Method status**

Internally validated

Published in peer reviewed journal

### **PROS, CONS & FUTURE POTENTIAL**

#### **Advantages**

Many genes for nervous system development and function are conserved. Genetic of ageing is established in *C. elegans* or *Drosophila*. *C. elegans* genetics is well established, genetic manipulation are quick and easy, many mutants are available. Culture is simple and lead to isogenic cohorts.

#### **Challenges**

The brain structure has nothing to do with mammalian systems. *C. elegans* lifespan is <1 month. *C. elegans* is an invertebrate, many organs are not conserved.

### **REFERENCES, ASSOCIATED DOCUMENTS AND OTHER INFORMATION**

#### **Associated documents**

#### **Links**

[Lab website](#)

### **PARTNERS AND COLLABORATIONS**

**Organisation**

**Name of the organisation** ULB

**Department** ULB Institute for Neuroscience

**Country** Belgium

*Coordinated by*



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