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Meet our worms!

Our worms have a long name:

***Caenorhabditis elegans*.**

They can normally be found on compost heaps, where they eat bacteria and fungi. They are 1mm long, so we need a microscope to see them.

- **Look at the worms labelled "wild type" first. These are normal worms.**
- **How do they move?**
- **Can you see different sizes (adults and larvae), and eggs?**

We grow them on a sort of jelly, covered with a layer of bacteria for them to eat.

Photo credits: John Sulston, LMB

We use worms to help us understand how our own bodies work

Worms live for about 17 days, and have about 300 babies!

The detail

Caenorhabditis elegans is a free-living nematode worm. Despite its simplicity, many of its genes are very similar to ours, so many cellular processes are conserved. As a result, it is a powerful model organism for understanding our own bodies, and what goes wrong in human diseases.

Its small size, short lifetime, and abundant offspring make it easy (and cheap) to grow in the lab. Thanks to 50 years of research, we have a wide array tools at our disposal. For example, we can introduce new DNA (i.e. make transgenic animals), to express fluorescent proteins in our cells of interest, or we can silence genes to find out what they do.

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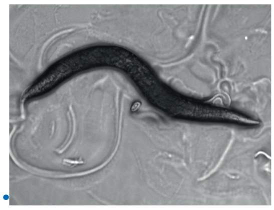
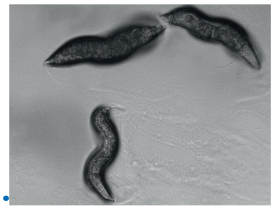
Match the mutant worms to their names

- **Now look at the mutants. These each have a mistake (mutation) in a gene, making them look different.**
- **See if you can match the mutants to their names.**





***rol-6*, roller**
These worms roll in circles while they crawl.

***unc-7*, uncoordinated**
These worms cannot move normally.

***egl-1*, egg laying defective**
These have problems laying eggs, so the eggs get stuck.

***dpy-2*, dumpy**
These worms are shorter and fatter than normal.

***lon-2*, long**
These worms are longer and thinner than normal.

Photo credits: Kristin Webster, LMB

The detail

Worms with mutations in their genes (genotype) that have visible effects on the worms (phenotype) are often the first clue that specific genes are important in particular cellular process. Studying mutations in *C. elegans* has helped scientists better understand human biology and disease. For example, the elucidation of the role of *egl-1* in cancer signalling pathways won a Nobel prize! The phenotypes that we study are often much more subtle than these, for example, defects in sensing a specific type of touch, taste or odour, or learning less well.