

Caenorhabditis elegans (C. elegans)

[see-nor-hab-die-tuss ell-uh-ganz]

immune system:

- | | |
|---|--|
| ✓ | ✗ |
| BASIC innate epithelial cells | no extensive innate |
| <ul style="list-style-type: none"> • MAPK • IGF-1 • TGF-B • PCD | <ul style="list-style-type: none"> • no TLRs • no NFkB no adaptive • no B cells • no antibodies |



This L4 is smaller than 1mm in length

2 natural sexes:

- | | |
|--|---|
| ♀ hermaphrodite: <ul style="list-style-type: none"> • XX • oocytes & sperm • vulva • spermatheca • uterus • 959 somatic cells • 302 neurons | ♂ male: <ul style="list-style-type: none"> • XO • sperm only • spicules • • • 1031 somatic cells • 383 neurons |
|--|---|

reproduction

- ♀ can produce around 300 offspring by self-fertilization
- crosses between ♀ and ♂ can produce 1000+ offspring

techniques:

- *in vivo* imaging
- RNAi
- multi-gen studies
- genetic screens
- CRISPR
- FACS
- single-worm studies
 - ddPCR, qPCR

6 chromosomes:

5 autosomes (I, II, III, IV, V)
1 sex chromosome (X)

1/2 dosage compensation

both ♀ X's are transcribed at 1/2 rate
single ♂ X transcribed at full rate

body parts:

- | | |
|-------------|----------|
| ✓ | ✗ |
| mouth | no eyes |
| pharynx | no blood |
| rectum | no heart |
| nerve cord | no nose |
| nerve ring | |
| gonad | |
| spermatheca | |

5 tissues:

1. epidermis,
2. muscles,
3. digestive system,
4. nervous system,
5. reproductive system.

life stages:

6 embryonic

1. first cleavage,
2. gastrula,
3. comma,
4. 1.5-fold,
5. 2-fold,
6. 3-fold.

7 post-embryonic

- 4 larval stages
 1. L1,
 2. L2,
 3. L3,
 4. L4.
- 2 adult stages
 5. young,
 6. gravid.
- 1 alternative stage
 7. dauer.

3 day life cycle

