

***Caenorhabditis elegans*, model nematode**

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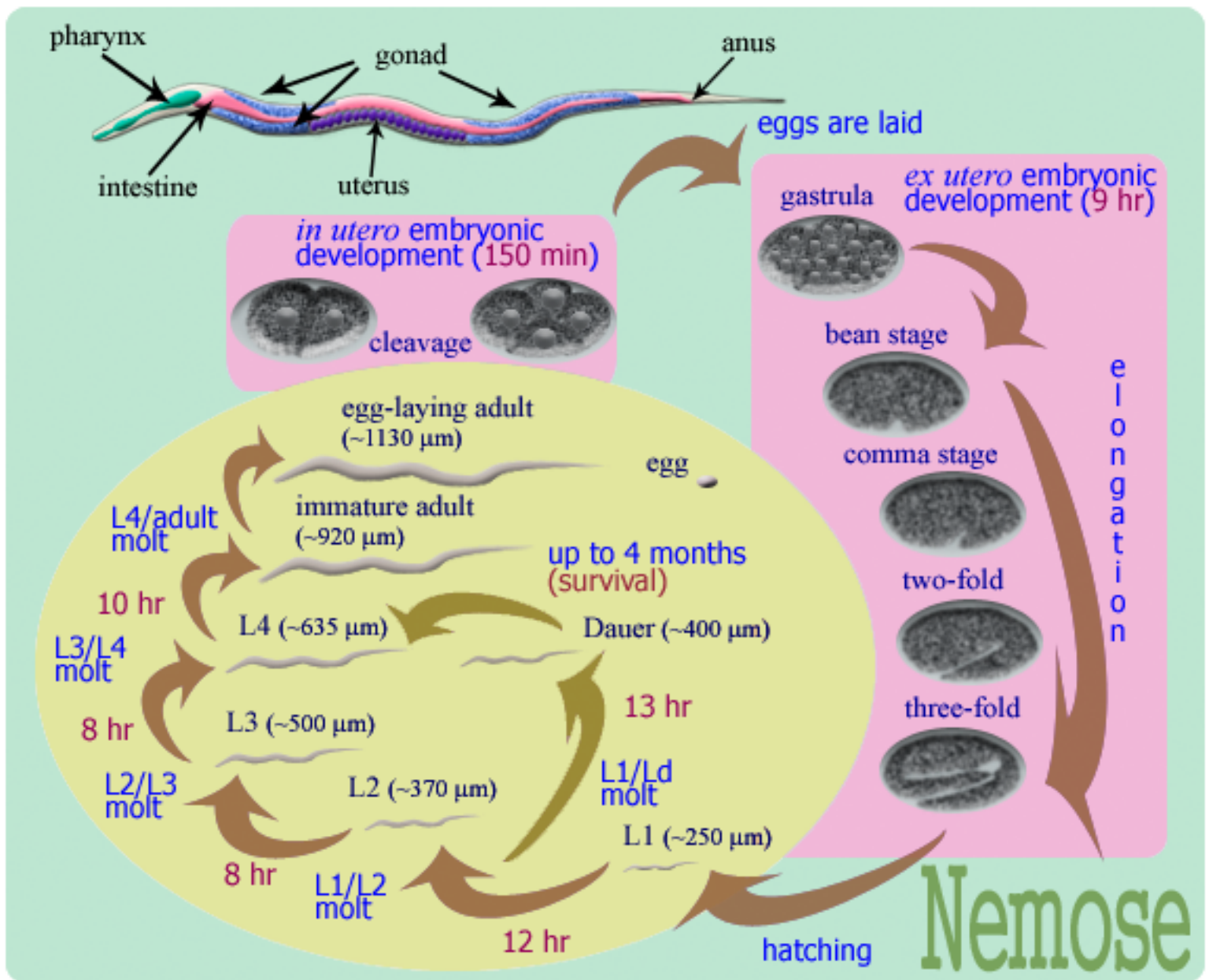
Taxonomy

cellular organisms - Eukaryota - Fungi/Metazoa group - Metazoa - Eumetazoa - Bilateria - Pseudocoelomata - Nematoda - Chromadorea - Rhabditida - Rhabditoidea - Rhabditidae - Peloderinae - *Caenorhabditis* - *Caenorhabditis elegans*

Brief facts

- *Caenorhabditis elegans* is a free-living nematode, about 1 mm in length. In the wild this species live in soil feeding on bacteria that develop on decaying vegetal matter.
- Similar to other nematodes, *C. elegans* has an unsegmented, cylindrical body shape that is tapered at the ends. Body of typical nematode consists of an outer tube and an inner tube separated from each other by the pseudocoelomic space. The outer tube (body wall) consists of cuticle, hypodermis, excretory system, neurons and muscles, and the inner tube contains the pharynx, intestine and, in the adult, gonad.
- *Caenorhabditis elegans* is used extensively as a model organism since 1974 and it became first organism which genome was completely sequenced.
- Predominant sex form of the species is hermaphrodite. Pure male worms constitute about 0.05% of the total population.

Development and life cycle of *Caenorhabditis elegans*



Developmental stages (life cycle)

Life Cycle Stages

The nematode's life cycle, from a single-cell egg to an adult, takes about 2 1/2 days at 25°C, and 6 days at 15°C. The total life-span of a worm under the best growth conditions is about 12 to 18 days at 20°C.

- egg

- unfertilized egg
- fertilized egg

egg is laid after being fertilized inside the mother and takes about 15 hours to develop; the worms are self- and cross- fertile; pattern of embryonic development is invariable from worm to worm; every one of the 556 cells that make up the newly-hatched larva develops from a rigid pattern of mitotic division leading back to the zygote

- hatching

- larval MeSH

each larval stage looks similar to the adult, only smaller

- L1 larva
- molting
- L2 larva
- molting
- L3 larva
- molting
- L4 larva

hermaphrodites produce sperm during the L4 stage

- 4th molting

- [Dauer larva](#)

a developmentally arrested dispersal stage that may be formed under conditions of starvation or overcrowding

- [adult](#)

References

PubMed articles

- [Major topic: Caenorhabditis elegans \(free full text articles in PubMed\)](#)

Websites

- [Wikipedia: Caenorhabditis elegans](#)



Last updated 3/26/09
nemose@live.com

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