

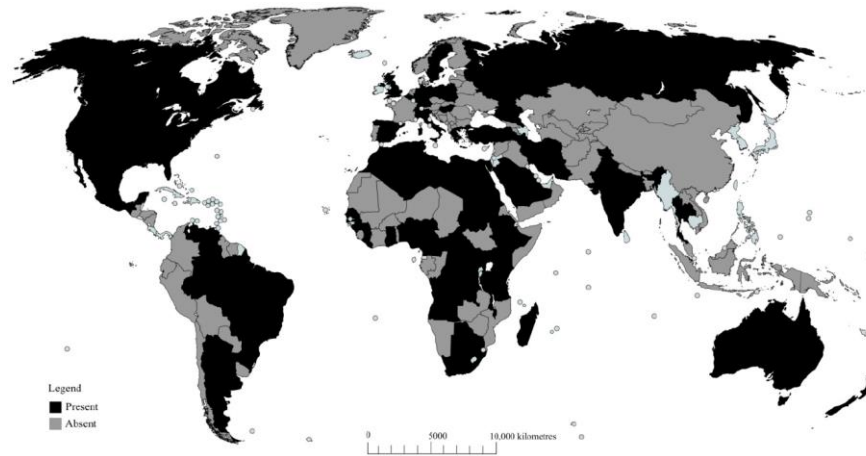
# Experimental embryology

*Galleria mellonella*

*Caenorhabditis elegans*

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# Greater wax moth - *Galleria mellonella*



- Pest in honey bee hives
- Body length 8 – 16 mm
- Wing span aprox. 30 mm
- Wide spread model organism in laboratory use
- Bred in incubator (30 °C)

nature

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Holes in plastic bags containing wax moth (*Galleria mellonella*) caterpillars tipped off researchers that the creatures can break down plastic. César Hernández/CSIC

ANIMAL BEHAVIOUR · 24 APRIL 2017

This caterpillar can digest plastic

Wax-moth larvae could inspire biotechnological methods for degrading plastic.

# Greater wax moth - *Galleria mellonella*



# Greater wax moth - *Galleria mellonella*



Female adult



Male adult



# Greater wax moth - *Galleria mellonella*



Egg



1<sup>st</sup> instar larva



2<sup>nd</sup> instar larva



3<sup>rd</sup> instar larva



4<sup>th</sup> instar larva



5<sup>th</sup> instar larva



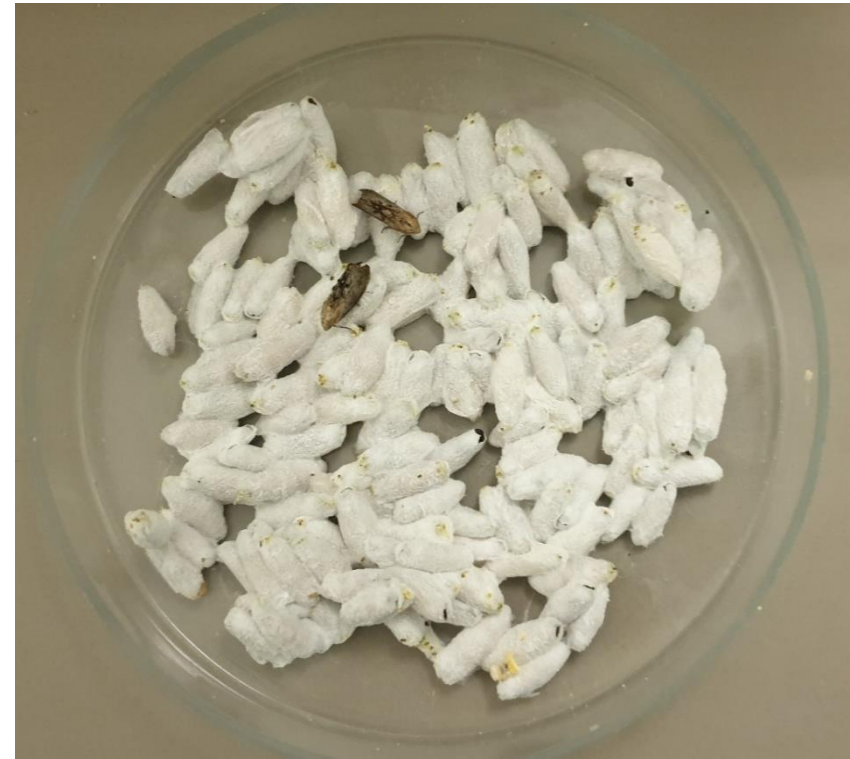
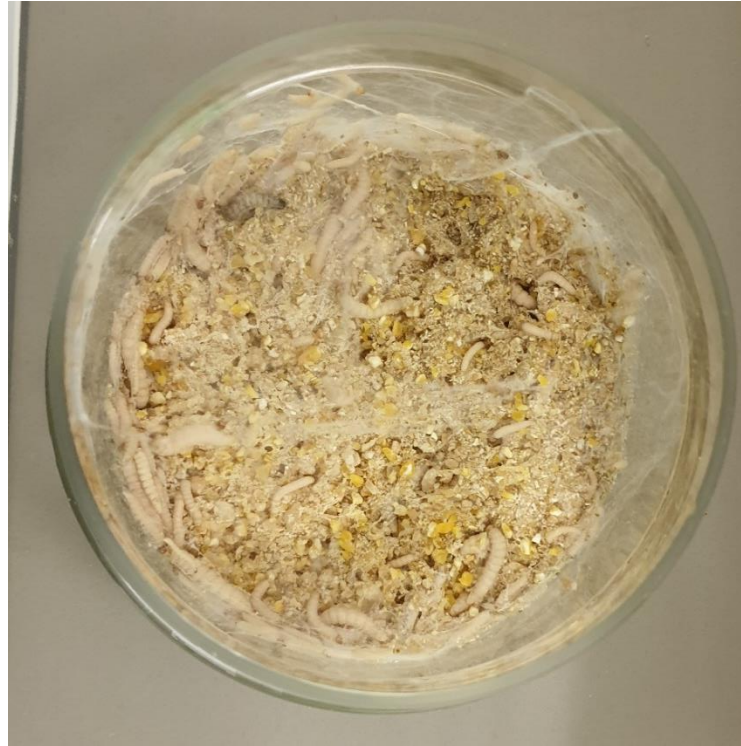
6<sup>th</sup> instar larva



7<sup>th</sup> instar larva



Cocoon



# Greater wax moth - *Galleria mellonella*



Journal of Invertebrate Pathology

Volume 28, Issue 3, November 1976, Pages 373-382



Cellular defense reactions of insect hemocytes in vivo: Nodule formation and development in *Galleria mellonella* and *Pieris brassicae* larvae

Norman A. Ratcliffe, Stephen J. Gagen

## *Galleria mellonella* as a model host for human pathogens

Recent studies and new perspectives

Juliana Campos Junqueira

Pages 474-476 | Received 08 Oct 2012, Accepted 09 Oct 2012, Published online: 01 Oct 2012

Download citation <https://doi.org/10.4161/viru.22493>

## Innate humoral immune defences in mammals and insects: The same, with differences ?

Gerard Sheehan, Amy Garvey, Michael Croke & Kevin Kavanagh

Pages 1625-1639 | Received 07 Aug 2018, Accepted 14 Sep 2018, Accepted author version posted online: 26 Sep 2018, Published online: 13 Oct 2018

Download citation <https://doi.org/10.1080/21505594.2018.1526531>



Journal of Insect Physiology

Volume 34, Issue 7, 1988, Pages 725-732



Effect of azadirachtin on development, juvenile hormone and ecdysteroid titres in chilled *Galleria mellonella* larvae

M Malczewska \*, D.B Gelman †, B Cymborowski &\*



Contents lists available at ScienceDirect

Neurotoxicology and Teratology

journal homepage: [www.elsevier.com/locate/neutera](http://www.elsevier.com/locate/neutera)



Caffeine administration alters the behaviour and development of *Galleria mellonella* larvae



J Fungi (Basel). 2018 Sep; 4(3): 113.

Published online 2018 Sep 19. doi: [10.3390/jof4030113](https://doi.org/10.3390/jof4030113)

PMCID: PMC6162640

PMID: [30235800](https://pubmed.ncbi.nlm.nih.gov/30235800/)

The Use of *Galleria mellonella* Larvae to Identify Novel Antimicrobial Agents against Fungal Species of Medical Interest

Kevin Kavanagh\* and Gerard Sheehan

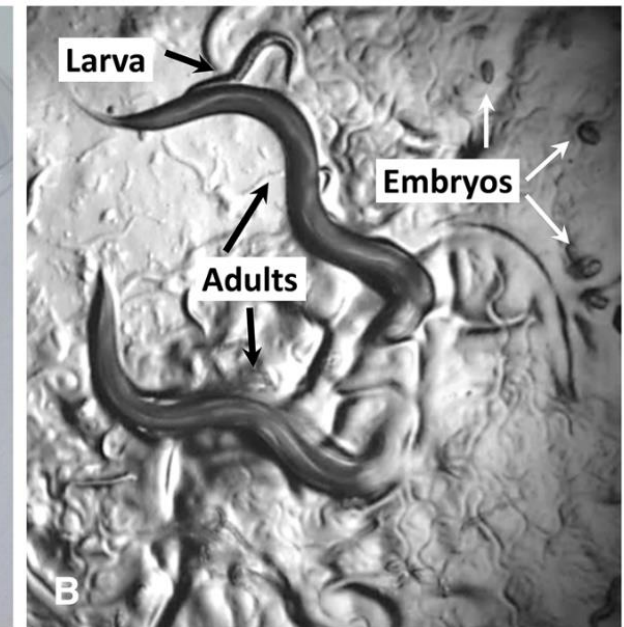
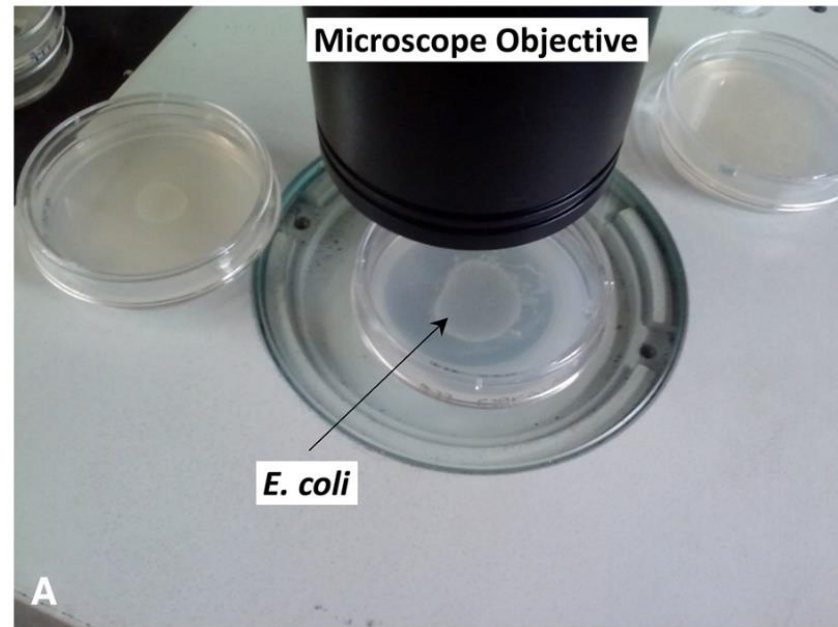
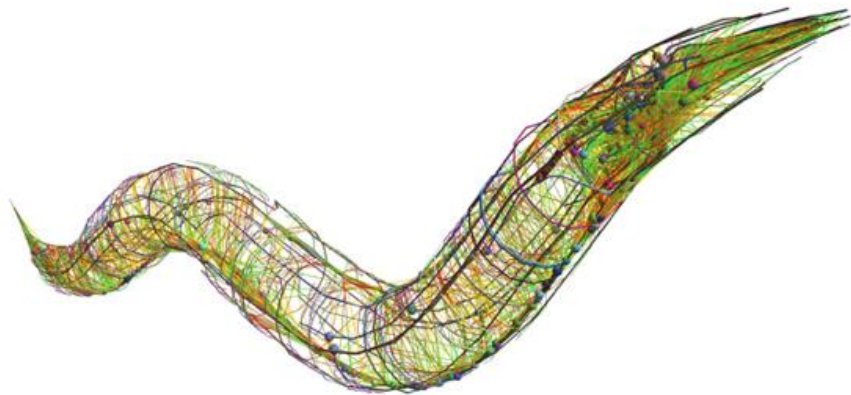
# *Caenorhabditis elegans*

- Aprox. 1 mm long; 5 – 100  $\mu\text{m}$  wide
- Free-living transparent nematode
- Exactly 1031 somatic cells and 302 neurons
- Worm book

<http://www.wormbook.org>

- Embryonic development

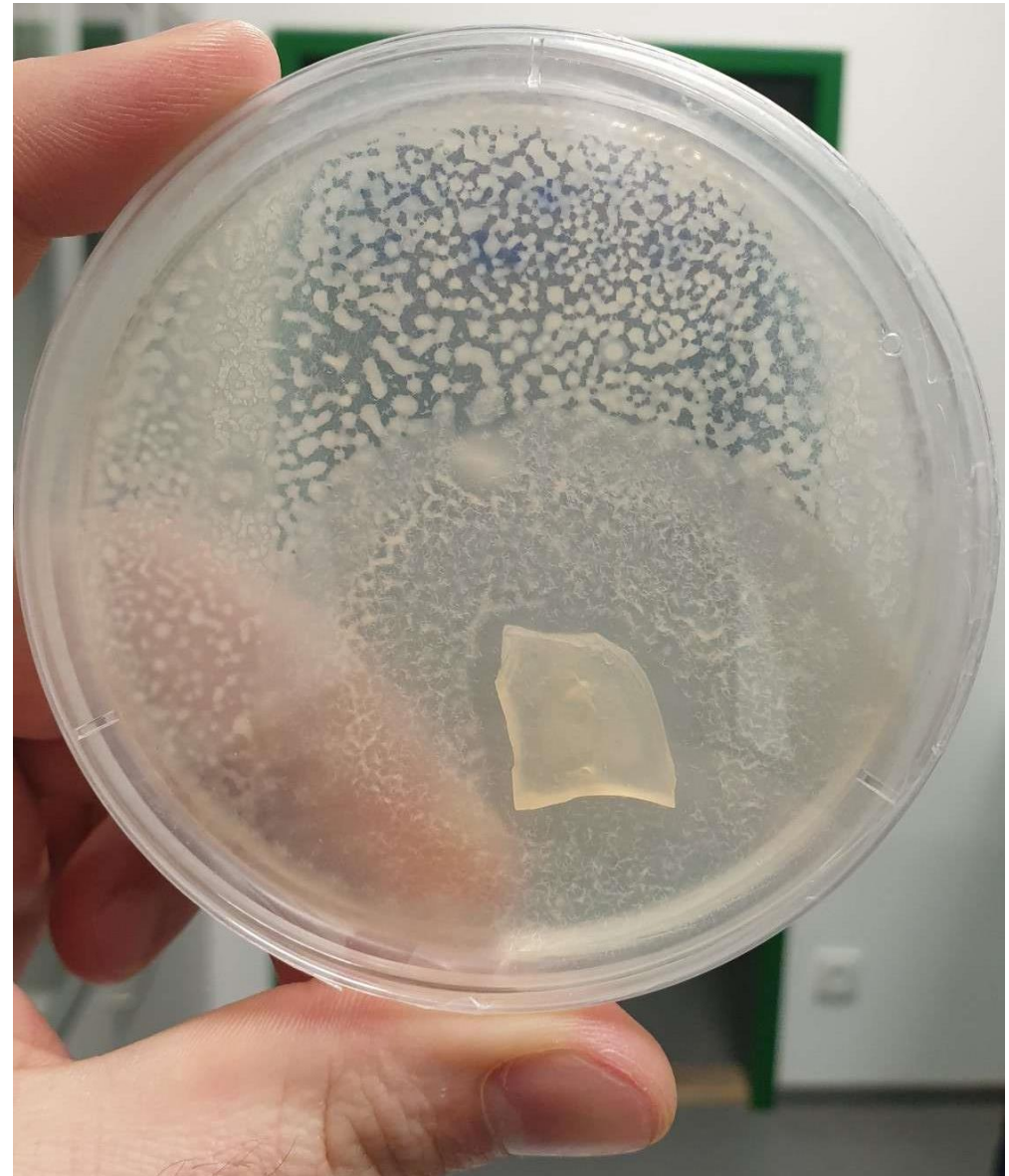
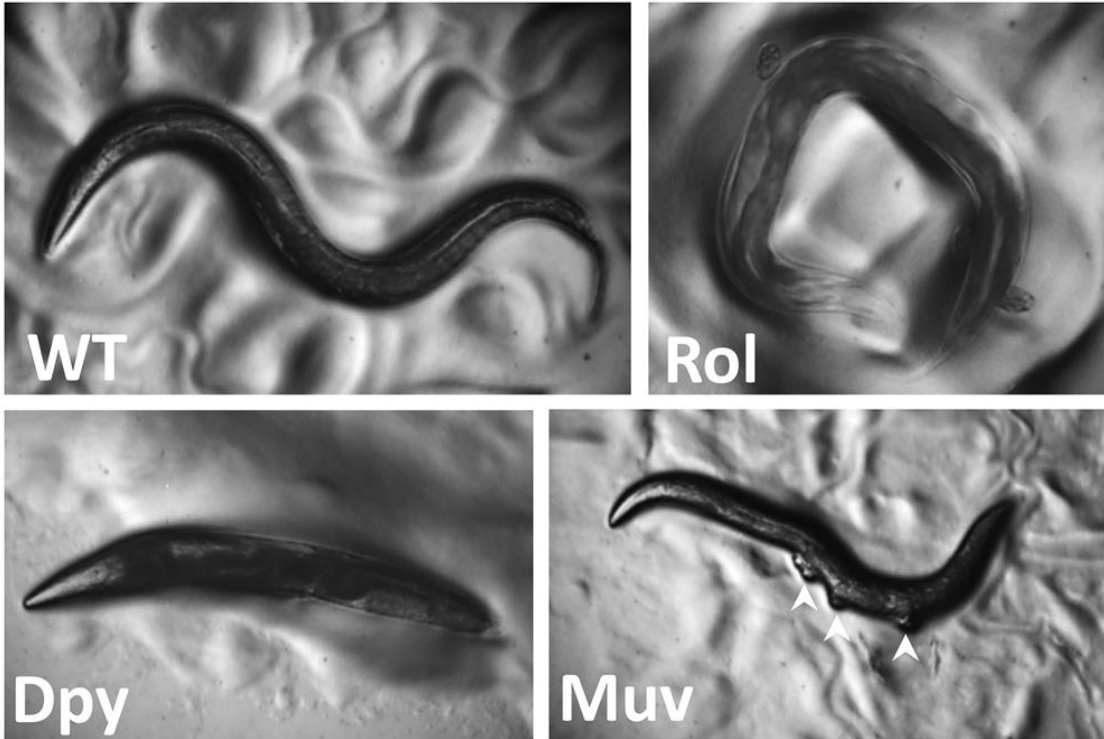
<https://www.youtube.com/watch?v=M2ApXHhYbaw&hd=1>





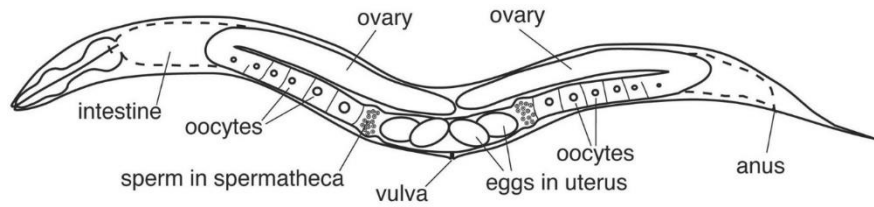
# *Caenorhabditis elegans*

- Bred on Petri dish in incubator (18 °C)
- Fed by OP50 strain of *E. coli*
- *Caenorhabditis* genetic centre  
<https://cgc.umn.edu>

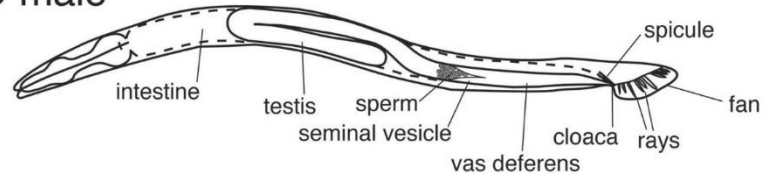


# *Caenorhabditis elegans*

XX hermaphrodite

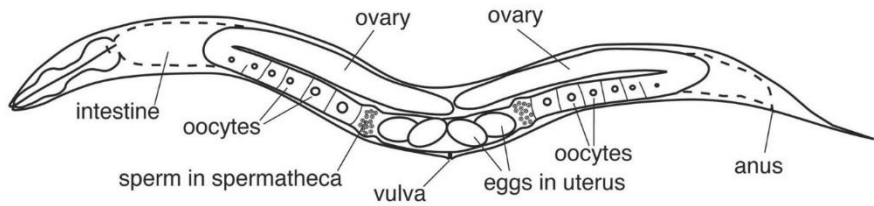


XO male

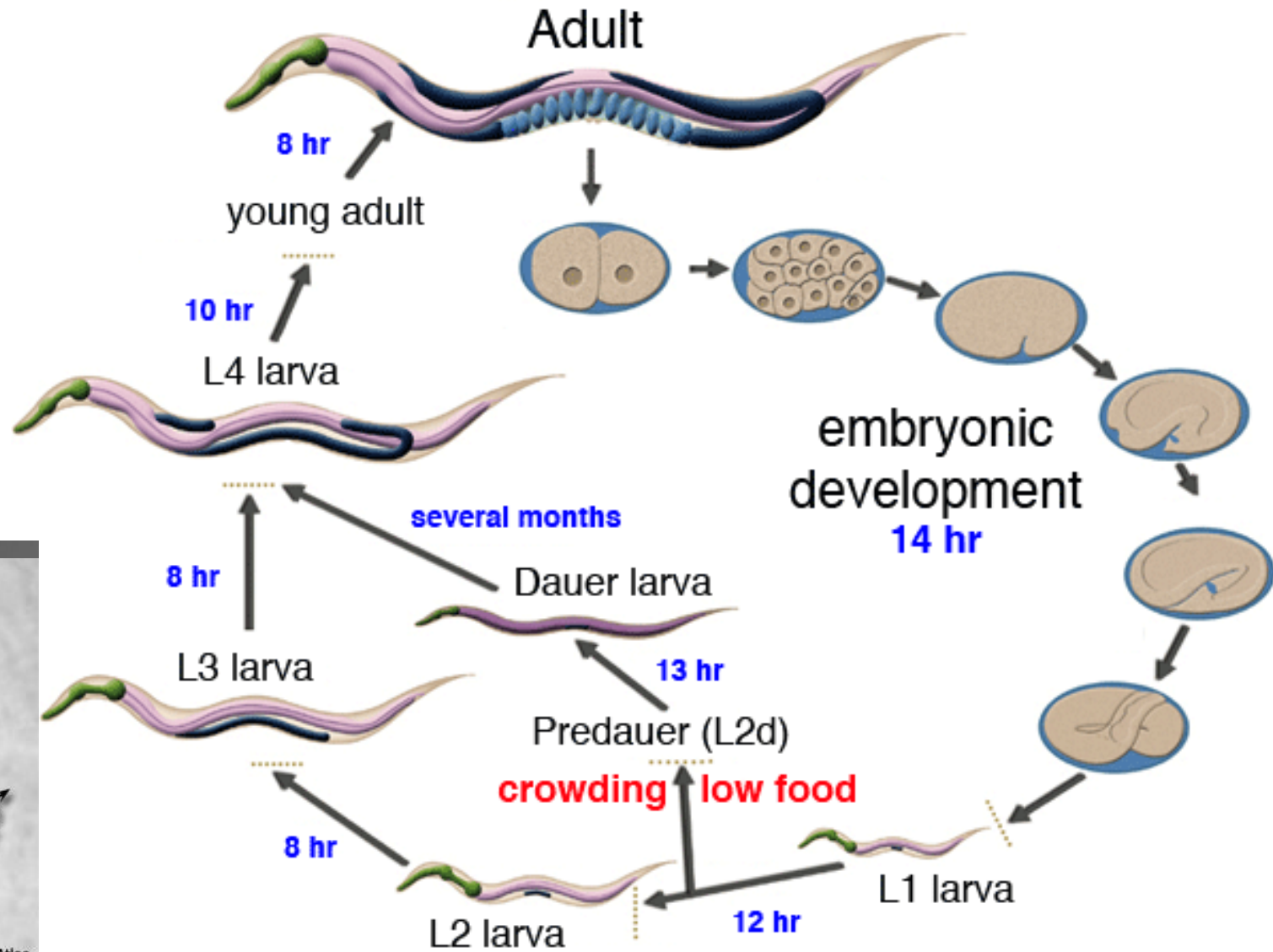
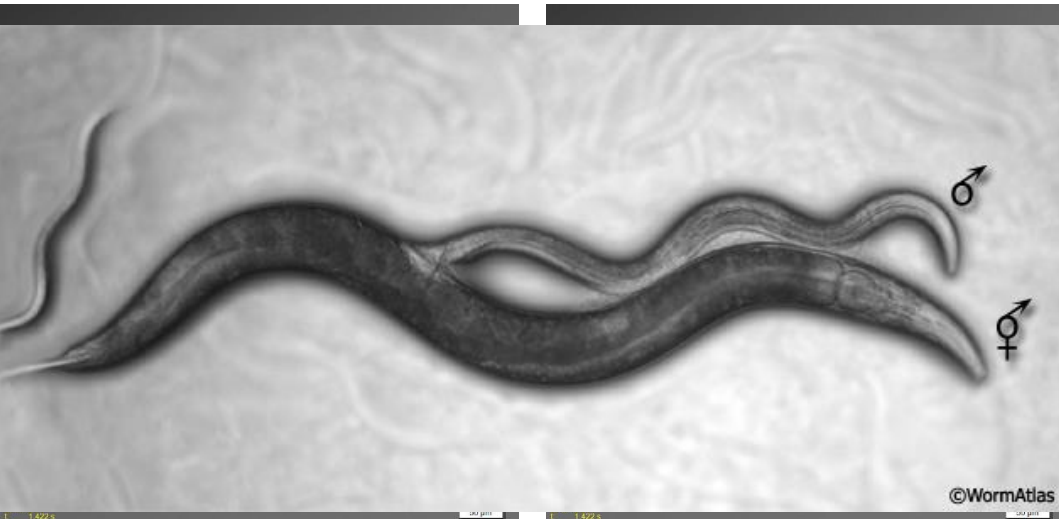
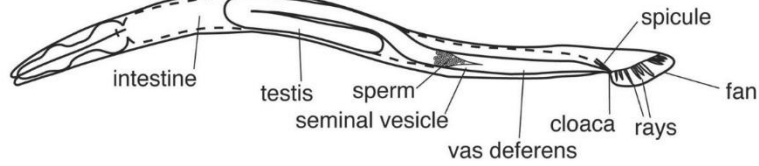


# Caenorhabditis elegans

XX hermaphrodite

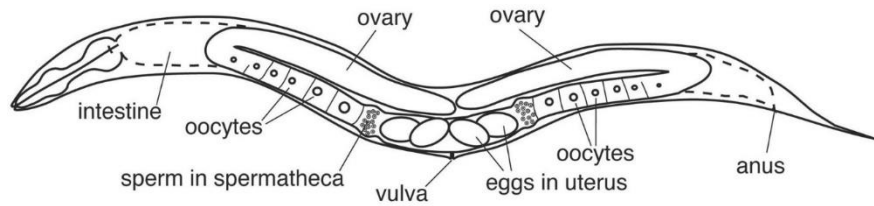


XO male

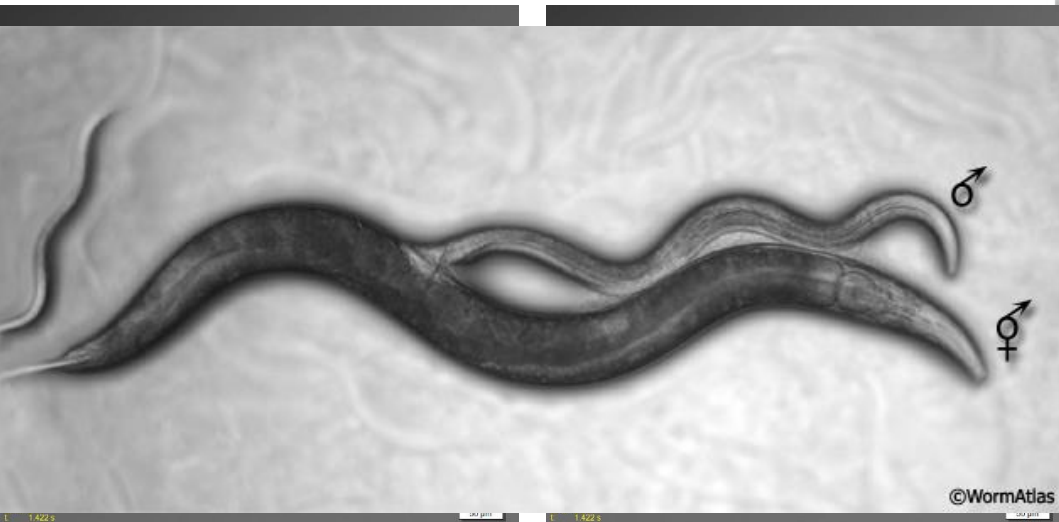
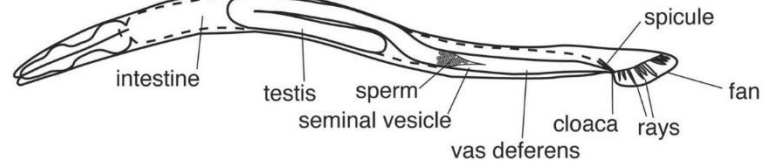


# Caenorhabditis elegans

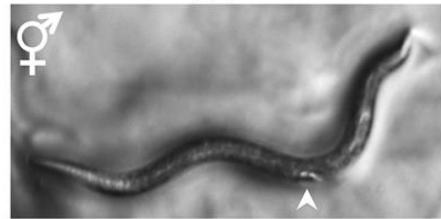
XX hermaphrodite



XO male



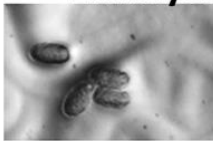
L4



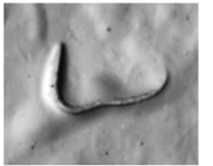
Adult



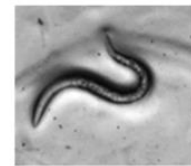
Embryos



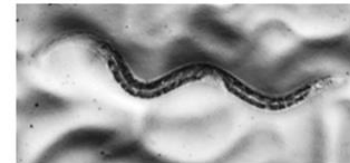
L1



L2



L3



Dauer



# Caenorhabditis elegans

Cell

Volume 107, Issue 7, 28 December 2001, Pages 893-903



Article

## Complementary Signaling Pathways Regulate the Unfolded Protein Response and Are Required for *C. elegans* Development

Xiaohua Shen<sup>1</sup>, Ronald E. Ellis<sup>4</sup>, Kyungho Lee<sup>2</sup>, Chuan-Yin Liu<sup>1</sup>, Kun Yang<sup>3</sup>, Aaron Solomon<sup>5</sup>, Hiderou Yoshida<sup>6</sup>, Rick Morimoto<sup>5</sup>, David M. Kurnit<sup>3</sup>, Kazutoshi Mori<sup>6</sup>, Randal J. Kaufman<sup>1, 2, 3, 4</sup> 



ELSEVIER

Current Opinion in Cell Biology

Volume 11, Issue 5, 1 October 1999, Pages 608-613



Review

## Control of cell migration during *Caenorhabditis elegans* development

Robert Blelloch<sup>a</sup>, Craig Newman<sup>b</sup>, Judith Kimble<sup>c, d, e</sup> 

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[PLoS Genet.](#) 2008 Feb; 4(2): e1000001.

Published online 2008 Feb 29. doi: [10.1371/journal.pgen.1000001](https://doi.org/10.1371/journal.pgen.1000001)

PMCID: PMC2265522

PMID: [18454200](https://pubmed.ncbi.nlm.nih.gov/18454200/)

## Alternative Splicing Regulation During *C. elegans* Development: Splicing Factors as Regulated Targets

[Sergio Barberan-Soler](#)<sup>1, 2</sup> and [Alan M. Zahler](#)<sup>1, 2, \*</sup>

# Trends in Genetics

Volume 16, Issue 1, 1 January 2000, Pages 27-33



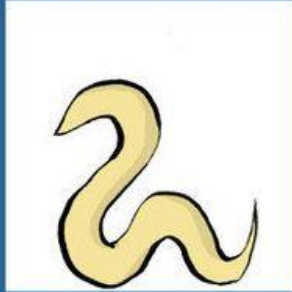
Review

## TGF $\beta$ -related pathways: roles in *Caenorhabditis elegans* development

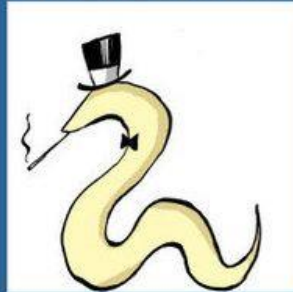
[Garth I Patterson](#)<sup>a</sup>  , [Richard W Padgett](#)<sup>b</sup> 

# meet the worms!

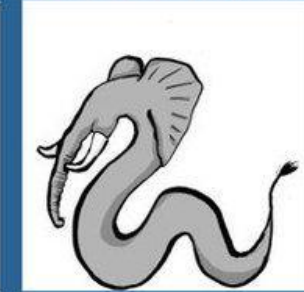
C. ELEGANS



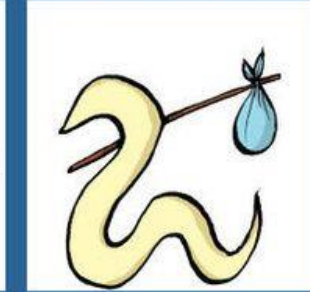
C. ELEGANT



C. ELEPHANT



C. EMIGRANT



C. PEASANT



C. ABSENT



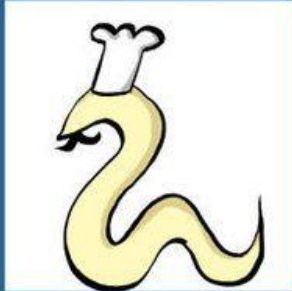
C. DORMANT



C. ERRANT



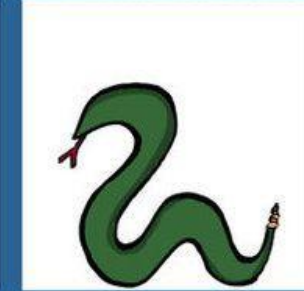
C. RESTAURANT



C. INFANT



C. SERPENT



C. VIBRANT

