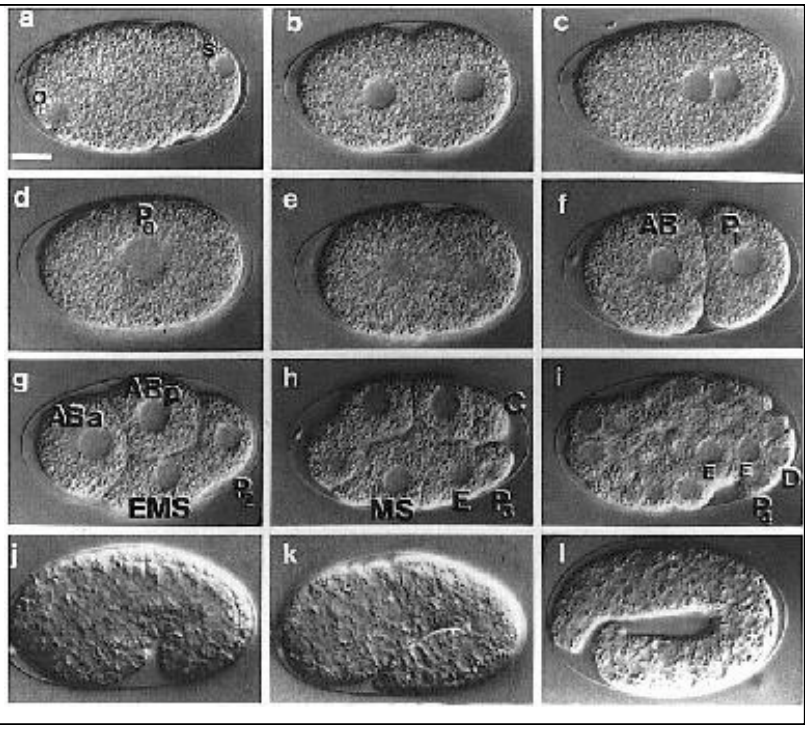
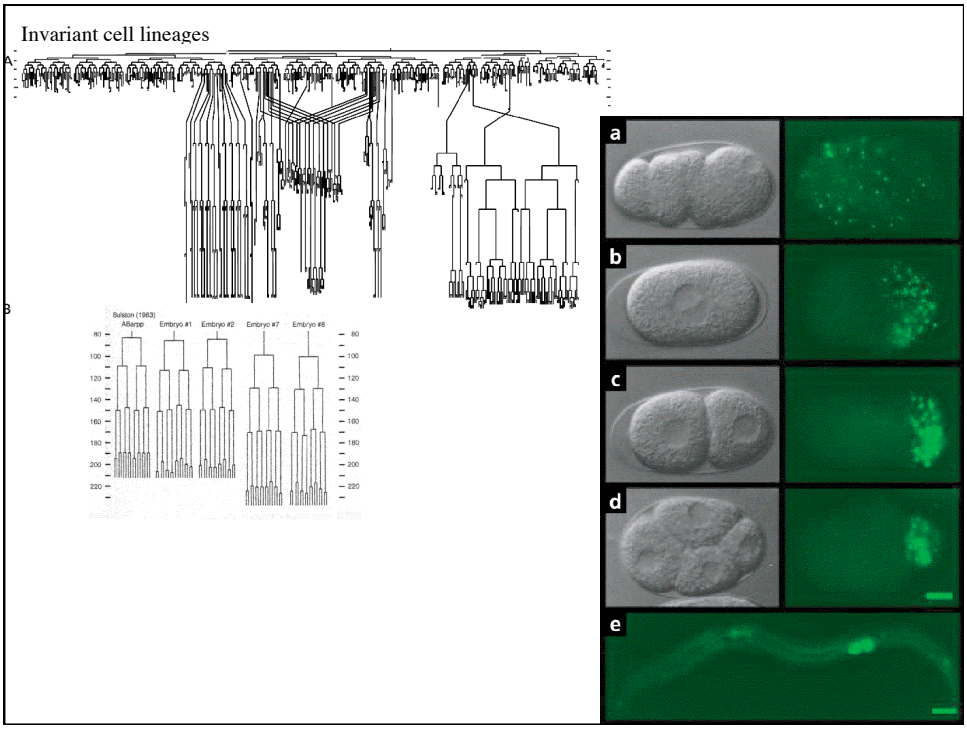
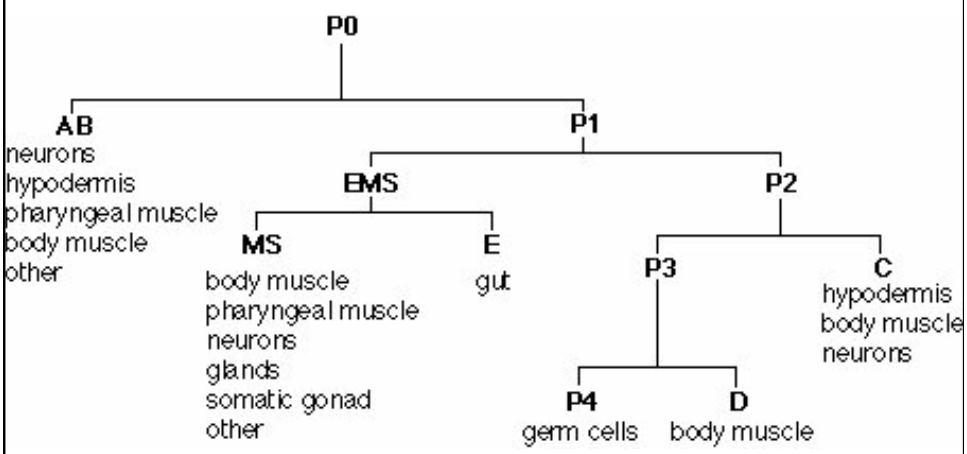
Overview of c elegans

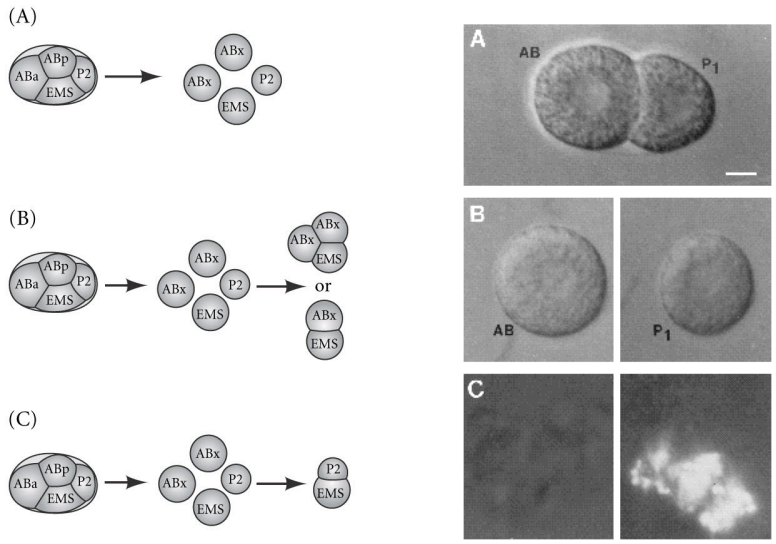


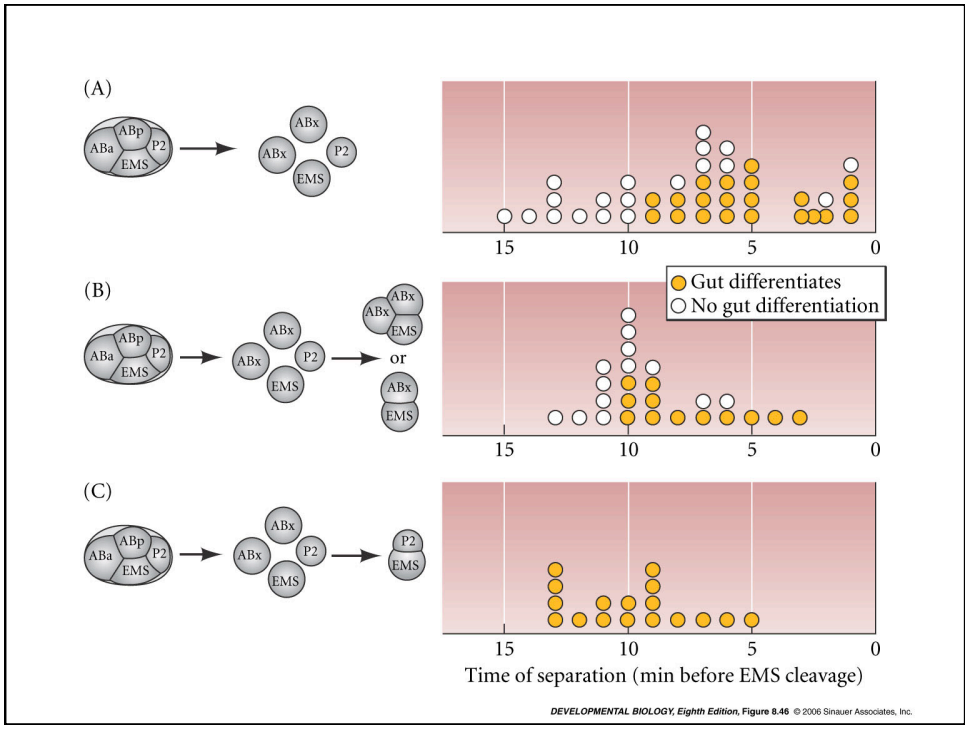
Invariant cell lineages



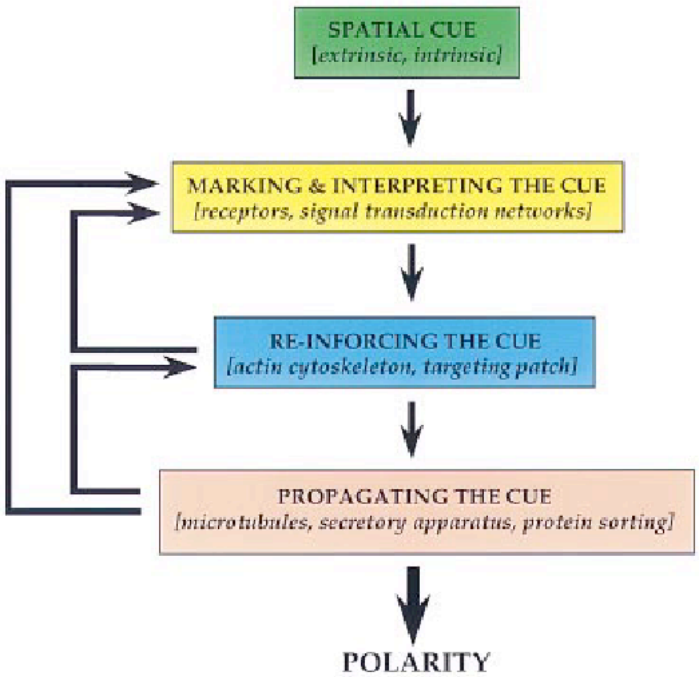
Lineage map

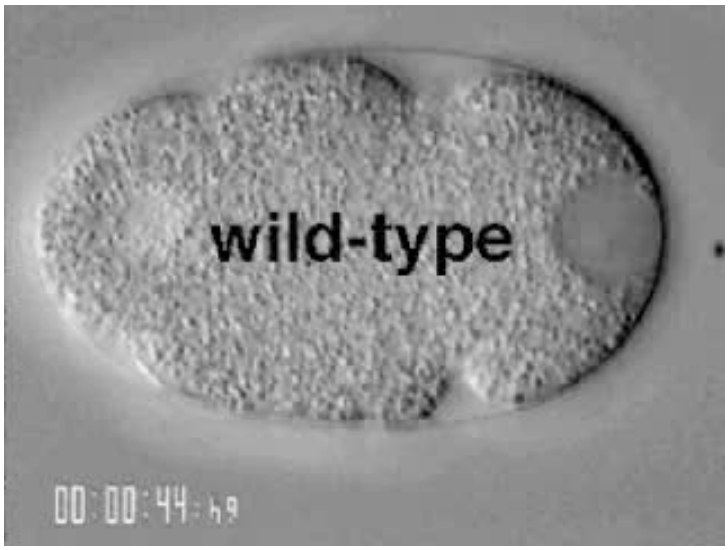

P0
AB
neurons
hypodermis
pharyngeal muscle
body muscle
other
P1
EMS
MS
body muscle
pharyngeal muscle
neurons
glands
somatic gonad
other
E
gut
P2
P3
P4
germ cells
D
body muscle
C
hypodermis
body muscle
neurons


(A)
ABp
ABa
P2
EMS
ABx
(B)
or
(C)
A
AB
P1
B
C


(A)
ABp
ABa
P2
EMS
ABx
ABx
P2
EMS
(B)
ABp
ABa
P2
EMS
ABx
ABx
P2
EMS
ABx
EMS
or
ABx
EMS
(C)
ABp
ABa
P2
EMS
ABx
ABx
P2
EMS
P2
EMS
15
10
5
0
Gut differentiates
No gut differentiation
Time of separation (min before EMS cleavage)
DEVELOPMENTAL BIOLOGY, Eighth Edition, Figure 8.46 © 2006 Sinauer Associates, Inc.

Spatial cu


SPATIAL CUE
[extrinsic, intrinsic]
MARKING & INTERPRETING THE CUE
[receptors, signal transduction networks]
RE-INFORCING THE CUE
[actin cytoskeleton, targeting patch]
PROPAGATING THE CUE
[microtubules, secretory apparatus, protein sorting]
POLARITY


wild-type
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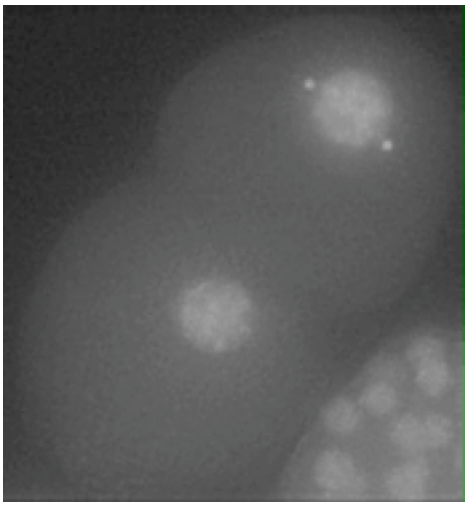
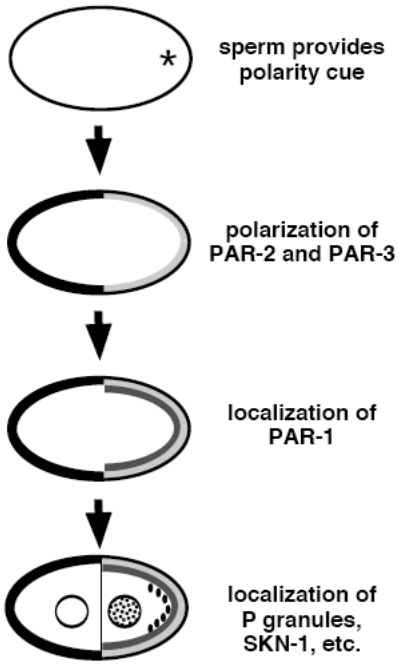
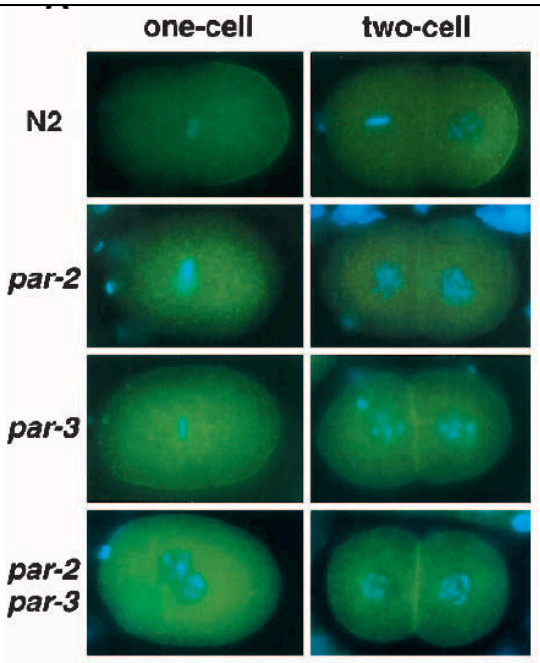


A model



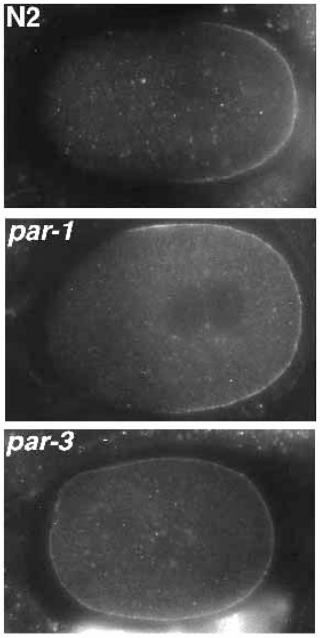
Boyd, et al., 1996

PAR1 distribution depends on *par-2*



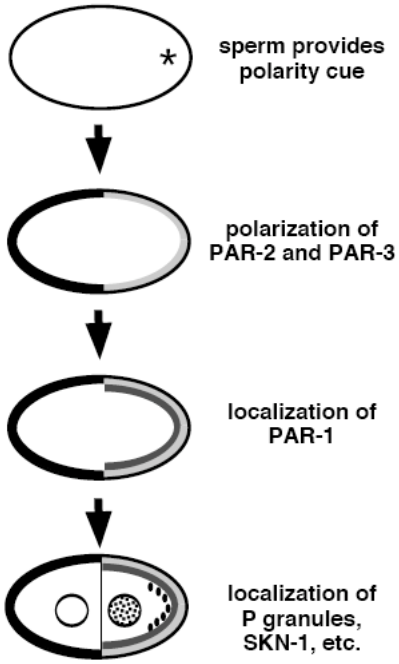
Boyd, et al., 1996

PAR2 distribution depends on *par3*



Boyd, et al., 1996

A model



Boyd, et al., 1996