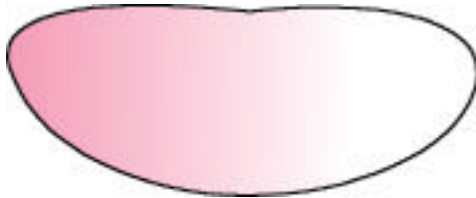


Developmental genetics - II

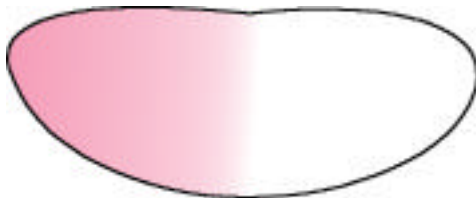
Genetics 371B Lecture 30

24 Nov. 1999

hunchback transcript:



hunchback protein:



why no hunchback protein here?

Step 3. Establish segment boundaries

gap gene mutations:

pair-rule gene mutations:

How does combinatorial expression work?

Step 4. Establish segment structure

segment-polarity gene mutations:

Step 5. Establish segment identity: selector genes

homeotic mutations:

loss-of-function mutations:

gain-of-function mutations:

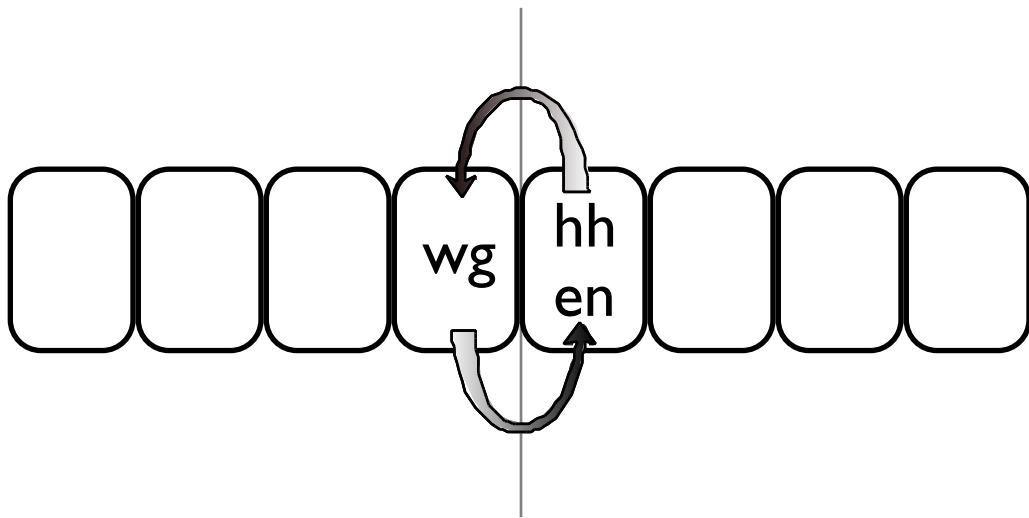
Conclusion from this mutational analysis:

The homeobox:

Remembering cell fate

- ◆ Positive feedback to maintain cell fate

- ◆ Cell-cell interactions



Phenotype of wg mutant?

Being conservative -

- ◆ Developmental mechanisms can be reused
e.g., hh and wg in fly leg

- ◆ Developmental mechanisms are often conserved
across divergent species