

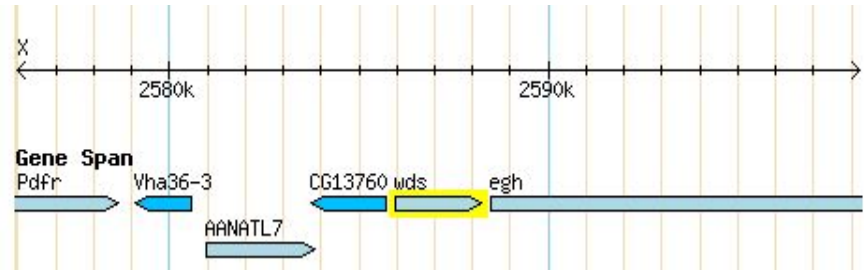


WDS in Drosophila

By: Reece Theakston, Megan Curry



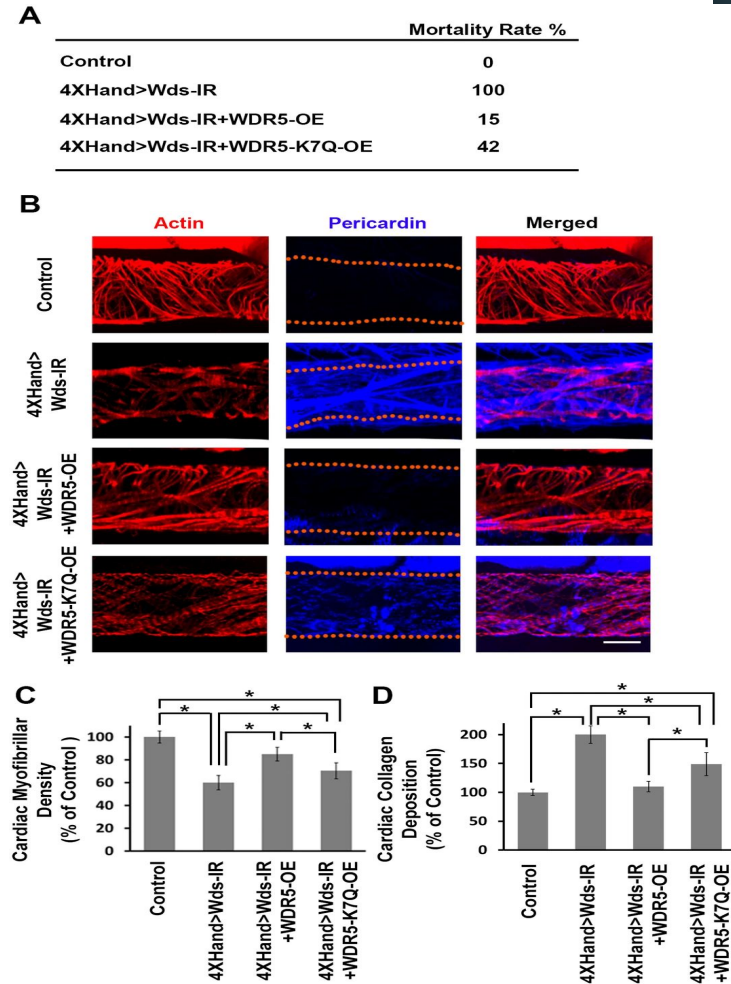
Background



- ❖ Official Name: Will Die Slowly
- ❖ Gene Type: Protein Coding
- ❖ Belongs to the WD repeat WDR5/wds family
- ❖ It is a lethal gene
- ❖ It kills all *Drosophila* before the end of the pupal stage

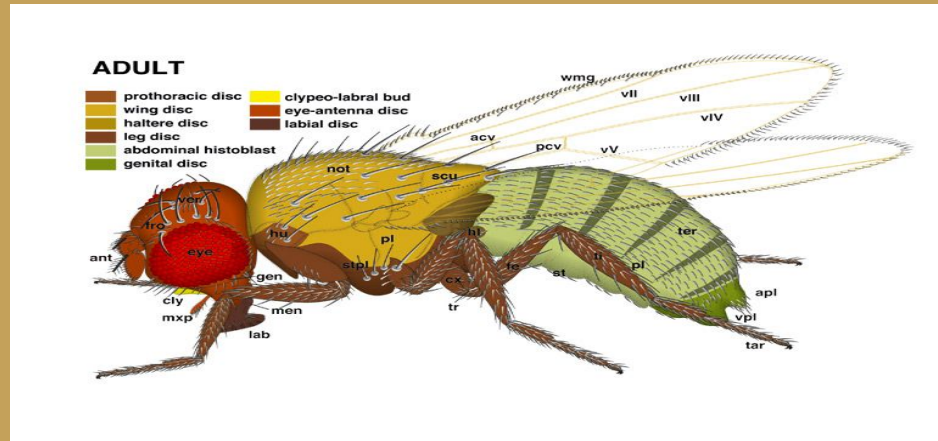
Background (Cont.)

- ❖ Contributes to histone acetyltransferase activity and protein binding
- ❖ Involved in biological processes (list on flybase)
- ❖ The phenotype of the alleles manifest in the female organism (directly affects the X chromosome)



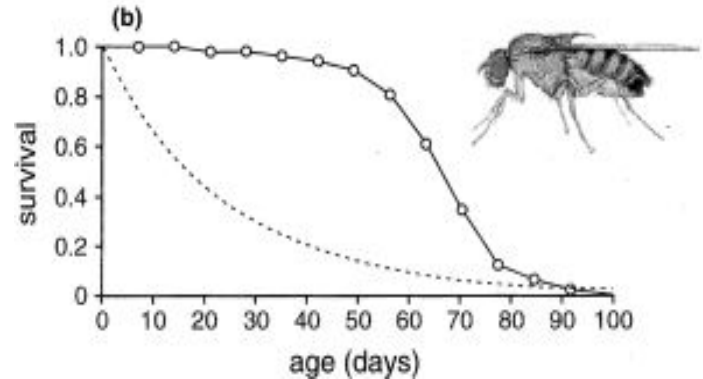
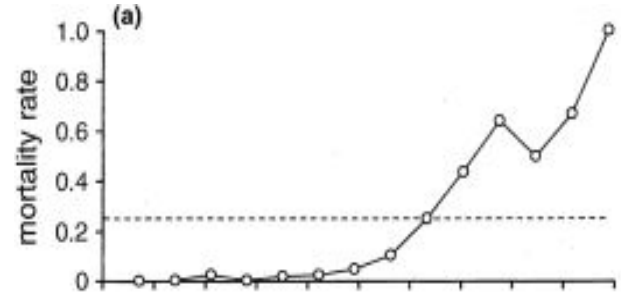
Hypothesis

If we modify the gene WDS using CRISPR Cas9, then the drosophila will not live past pupal stage.



Significance

- ❖ Show the direct effects that the gene has on the larvae and pupal drosophila
- ❖ Show how adaptations can change the mortality rates and times
- ❖ Could possibly show us how to eliminate potential new diseases or organisms that cause harm



Experimental Design

- ❖ Insert WDS into the larvae of drosophila along with the CRIPSR Cas9 gene
- ❖ Let the larvae grow with the gene mutation
- ❖ Chart and observe the changes in the larvae and pupal stages
- ❖ Compare the results to a control group

Expected Results

- ❖ High mortality rates
- ❖ Different mortality times
- ❖ Death before the end of the pupal stage

References

<https://elifesciences.org/articles/22617/figures>

<http://flybase.org/reports/FBgn0040066>

<https://www.nature.com/articles/6885440>

<http://www.sdbonline.org/fly/atlas/00atlas.htm>