Drosophila Nomenclature

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Why Flies?

- Super fast life cycle
  - About 2 weeks
- Lots of behaviors!
Phenotypes

• Describe:
  • Appearance
    • Often used as markers
  • Behavior

• Not italicized

• Examples
  • White (eyes)
  • Notch (wing)
  • Fruitless (sexual behavior)
Genes

- Named for mutant phenotype
- Italicized (both genes and alleles)
  - Example:
    - Gene Name: *fruitless*
    - Gene Symbol: *fru*
    - Placeholder name: *CG14307*
  - Lowercase if recessive
    - *white* (*w*)
  - Uppercase if dominant
    - *Shaker* (*Sh*)
FlyBase – useful tool
Mutations

• Relative to wild-type
  • $fru^+$

• X-linked written as superscripts to X chromosomes
  • $Xw$

• Alleles
  • Superscripts with numbered alleles: $fru_1, fru_2, fru_3$
    • Alternative: $fru[1]$, etc.
    • May be omitted or shorthanded but $\rightarrow$ ambiguity so be careful!
Genotype

• Relative to wild type
• Alleles listed in order of standard genetic map:
  • 1; Y; 2; 3; 4
• Genes separated by space
• Homologous chromosomes separated by /
  • \( y^1 \ w^1 \ f^1 \) implies \( y^1 \ w^1 \ f^1 /y^1 \ w^1 \ f^1 \)
  • \( y^1 \ w^1 \ f^1 / y^1 \ f^1 \)
• Non-homologous chromosomes separated by ;
  • \( bw^1; e^s; ey^1 \)
Strains

- Use FlyBase to find
- order from BDSC
Proteins

- Not italicized
- Capitalized
- Same names/symbols as gene
- Example
  - Gene/Symbol: *hedgehog/hh*
  - Protein/Symbol: Hedgehog/Hh
Drosophila Methods

- CO\textsubscript{2} → knock out
- Cold → slows life cycle
- 10 flies per vial
- 100 flies per bottle
Sources

- http://flystocks.bio.indiana.edu/Fly_Work/nomenclature.htm
- http://flybase.org/reports/FBgn0004652.html
- http://flystocks.bio.indiana.edu/Reports/2057.html
- http://www.exploratorium.edu/imaging--staoon/acovioes/classroom/wild_mutant/ca_wild_mutant.php