

Ontology Browser and Population Biology Browser (PopBio)

1. Use VectorBase to search for “kdr”.
 - Click on “kdr L1014S” and “L1014F” of hits from the Mosquito Insecticide Resistance Ontology, MIRO.
 - You arrive to the Ontology Browser.
 - Explore this and the other “kdr” terms.
 - You could also go to PubMed for more information.
2. Keep the Ontology Browser open.
3. Use VectorBase search and go to the genome browser for this gene:
 - AGAP004707
4. Keep the genome browser page for this gene open.
5. What is the relationship between this gene and the hits you were exploring in the Ontology Browser?
6. The insecticide resistance database (IRBase) will no longer be updated. All its experiments will be incorporated into VectorBase population biology browser.
 - Go to the population biology browser home page.
 - Follow the link to the “pyrethroid” insecticide resistance assay example.
 - Select *A. funestus*
 - Click on assay “IRBRA10719”
 - Which type of protocol (or bioassay) was used to determine the phenotype of this mosquito?
7. Go to the population biology browser home page.
8. Follow the link to the “Donnelly” project example.
9. Go to the “Graphical summaries” and display the possible graphs available here.
 - Which mosquito species were analyzed for this study?
 - Which countries are included in this study?
10. Go to this URL www.vectorbase.org/popbio/sample/?id=VBS0000133 or just use VectorBase search and type “VBS0000133”.
 - This is a “Sample” page.

- Click on the icon/link “Browse Genome” to visualize these SNPs in the genome browser. The track will be activated automatically and is called “LSTM_GoldenGate_assay_0.8k”.

11. Go to the population biology browser home page.

12. Follow the link to the “laboratory population” sample example.

- In the “Filter Results” box click on *A. aegypti*
- Select hit “*A. aegypti* ROCK” (Sample VBS0000024)
- Follow the link to MR4 (MRA-734). Why is this information useful?
- Use VectorBase search and type “VBS0021246”

13. How many projects, samples, assays and insecticide resistance assays are available on the population biology browser?

Note: The answer key for these practice exercises will be available as a separate file next year. Remember that answers may change because VectorBase is updated every two months (www.vectorbase.org/releases).