Name:

Date:

Browsing Genomes: Activity

You are going to explore ToxoDB using GBrowse. Go to:

<http://discoveringthegenome.org/discovering-genome/browsing-genomes/open-toxodb-gbrowse>

Follow the instructions that will guide you through the steps. Then, answer the following data questions:

1. Focus on the blue gene first. Look at the blue gene expression data in each of the four time points. Note down whether the gene is expressed a lot or not very much in each coverage plot (blue Tachyzoite stage, day3, day5, and day7).

2. Now focus on the red gene and describe its gene expression patterns in these four time points. Is there a lot or a little red gene expression for each of the time points: Tachyzoite stage, day3, day5 and day7?

3. These next questions are related and are asking you to compare what you observed in the above questions. What is the major difference between the way Toxoplasma gondii’s red and blue genes are expressed? At what time point do you see this difference? From what you know about these time points, are both these genes expressed in the same way when T. gondii is in humans and when it is in cats? Which gene is up-regulated, meaning there is a big increase in gene expression, in the cat compared to in the human?

Challenge:

Did you notice that there is blue gene expression (RNAseq data) that shows up not only under the blue gene, where you expect the blue gene expression to be, but also there is a little blue expression under where the red gene is? Conversely, there is small amount of red gene expression that arises from the part of the genome where the blue gene is located (e.g., small blocks of red on the left side of the plot). Why might this be?