Exploring the Gene Page

Note: *this exercise uses VectorBase.org as an example database, but the same functionality is available on all VEuPathDB resources.*

Learning objectives

Gene pages:

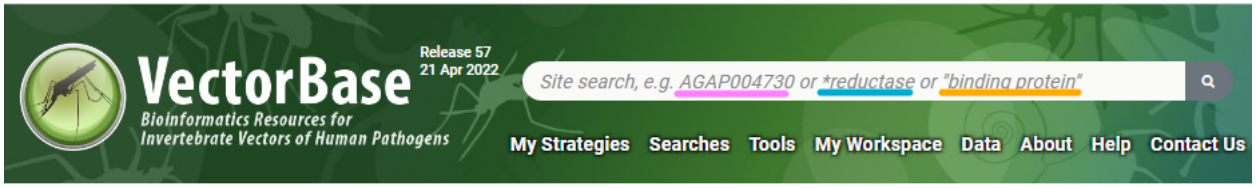
- Become familiar with the information in gene pages
- Navigate to and from the gene pages
- Use the contents section of the gene page
- Interact with gene page subsections

1. Navigation to the Gene pages

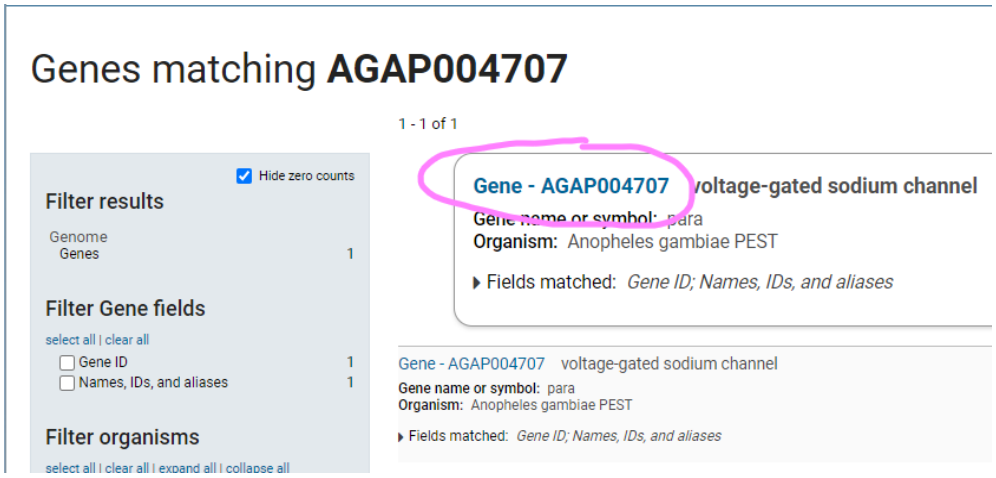
For this exercise visit the gene page for AGAP004707 (voltage-gated sodium channel). How can you do it? Go to the **Site Search** box, at the top of the website. Notice you can use different types of keywords:

- gene ID
- gene name or function with a wild card/asterisk
- gene name or function with quotation marks

Type the gene ID: AGAP004707

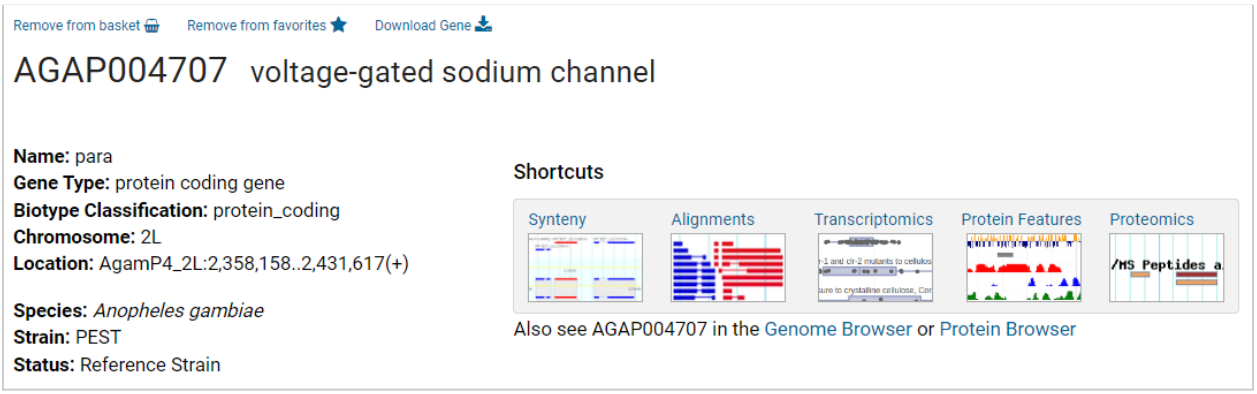


Click on the gene ID in the results page



2. Explore the top section of the gene page

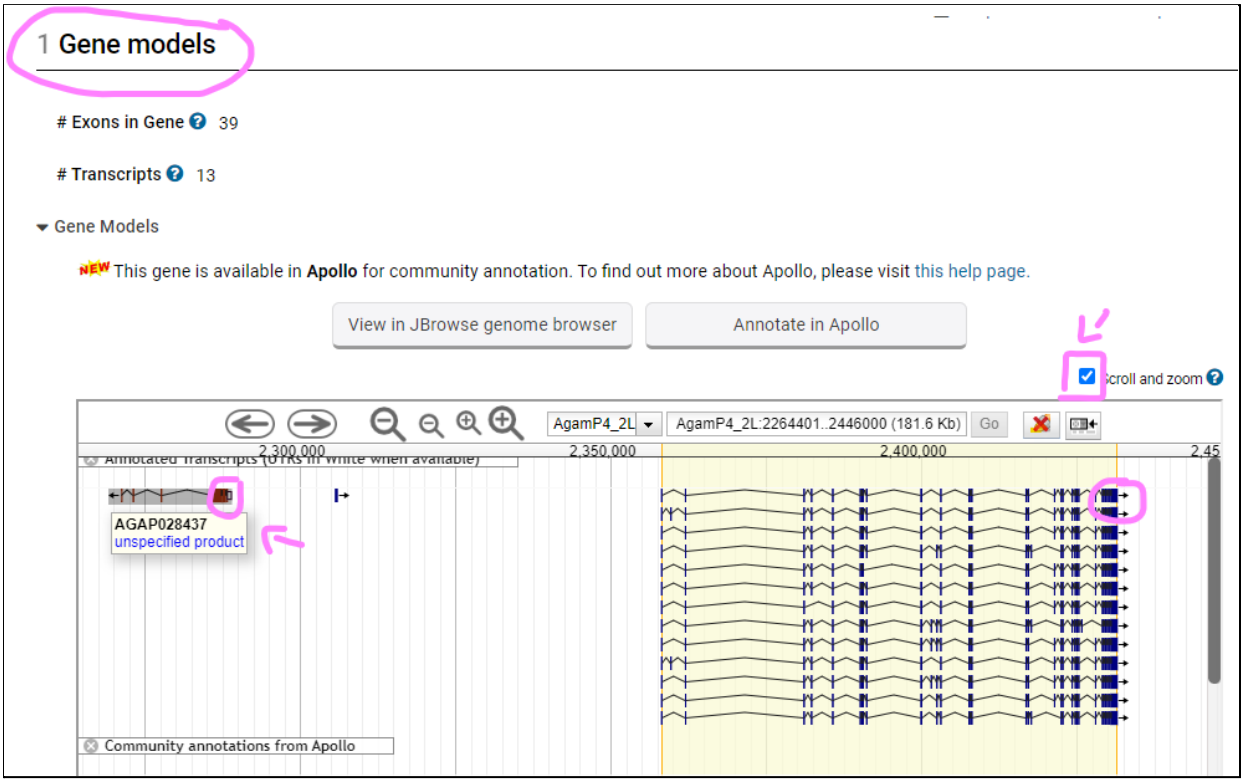
- What information is in this section?
- Can you find which chromosome this gene is located on?
- Is this gene protein coding?
- What do the shortcuts do?



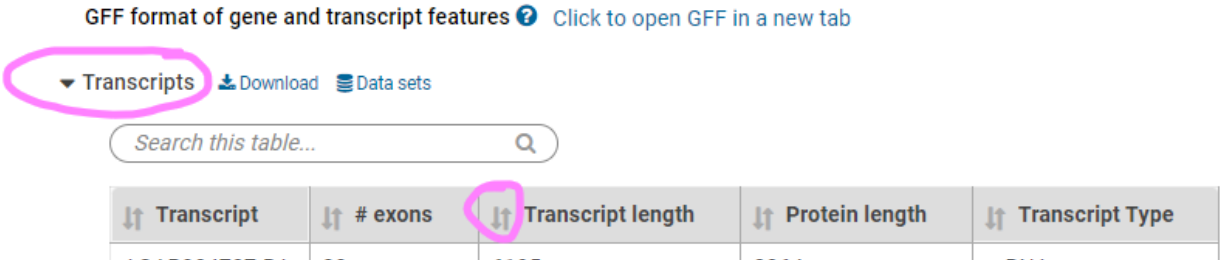
3. Explore the Gene models section

Scroll down to the gene model section of the gene page.

- What direction is the transcript relative to the chromosome?
- Does the gene have UTRs?
- How many exons does the gene have?
- Does this gene have any available "Community annotations from Apollo"?

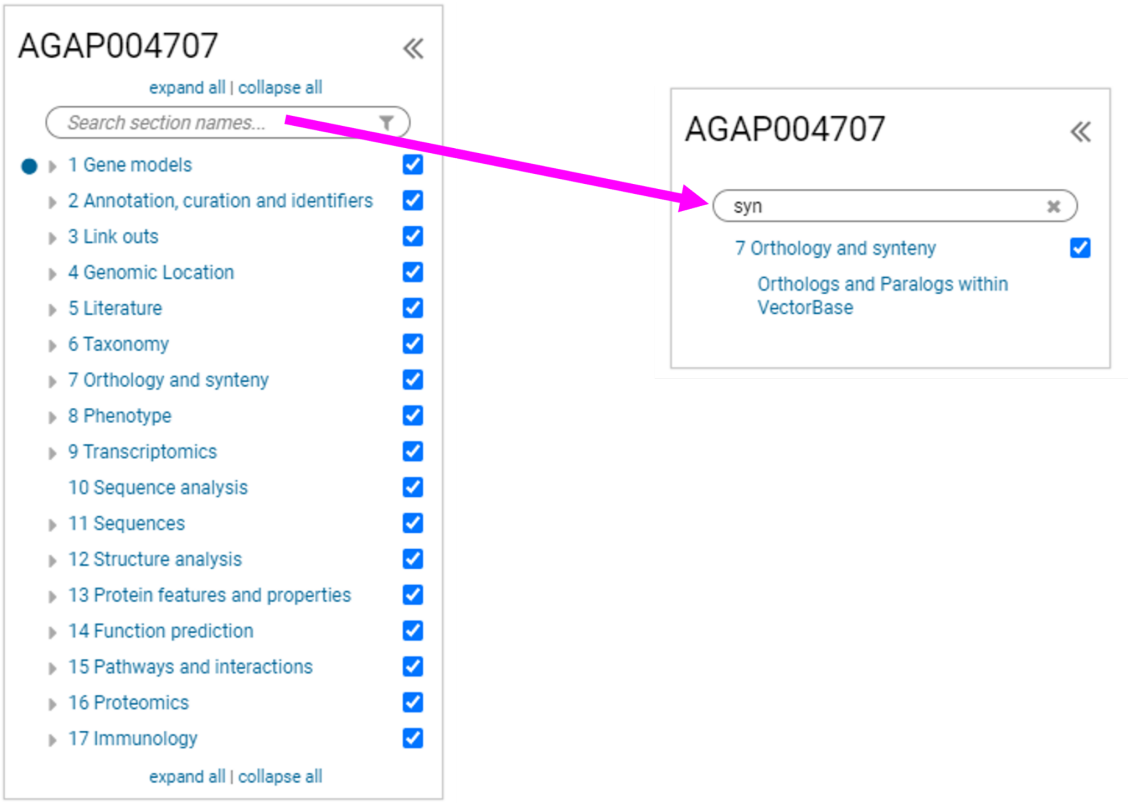


- What is the lenght of this gene longest transcript? You can determine transcript length by expanding the Transcripts section. Click on the appropriate column header to sort the rows



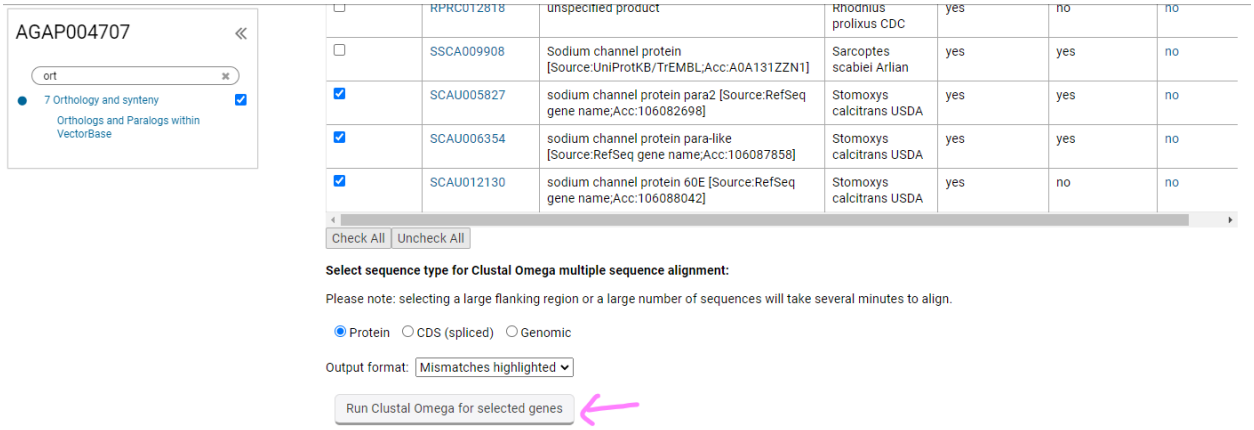
4. **Content navigation**

How do you find/navigate to the different sections of the page? Use the “Table of contents'' menu on the left side, type a keyword and click on the menu, click on the work to navigate to it on the page. In the example below the word “synteny” is used. You can also click on the images in the Shortcuts section in the top of the page.



5. **Running an alignment of selected sequences**
   a. Expand the “Orthologs and Paralogs within VectorBase” section.
   b. Select a few genes from the table using the checkbox.

c. Scroll to the bottom of the table and click on the Run Clustal Omega button.



6. Explore expression evidence of the gene page.

- Go to the gene page of AGAP008802
- Is there any RNA-Seq data available for this gene? Go to the Transcriptomics section and expand the subsections called RNA-Seq transcription summary and Transcript Expression. Are there any studies comparing males vs. females?
- Is there any mass spec. data available for this gene? Go to the Proteomics section. What do the different color lines mean in the genome browser? trans

Feel free to scroll around the gene page
and ask questions for clarification!