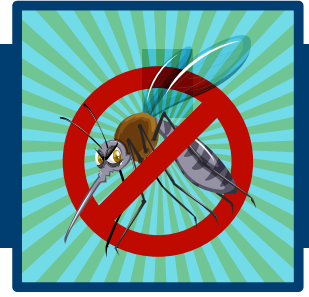


UNIT: CHIKUNGUNYA

LESSON 4: MAKING THE CASE AGAINST CHIKV

Activity 4B: Most Likely to Go Viral!



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Directions

Refer to the reading and data table from the Student Directions activity to answer questions 1 – 4. Questions 5 and 6 do not require the data from the activity.

1. During the time interval from 0-2 hours, each data set had a negative slope. Explain what this means and what negative slopes indicate about the stage of pathogenesis.
2. Describe the pathogenesis stage that is happening between the hours 2-6. How does this explain the trends seen in each dataset between that time?
3. In the CHIKV article, figures 2 and 3 both state “CHIKV replicates more efficiently in human macrophages than in murine macrophages.” Support this claim with evidence from your findings.

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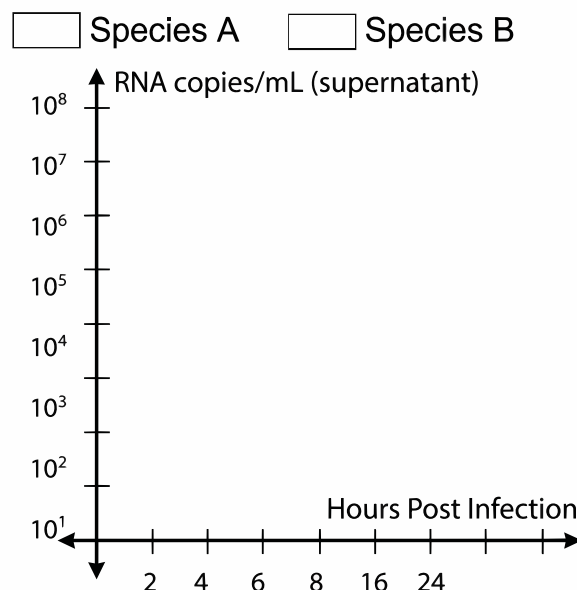


4. Using Figure 3, interpret how each data set's replication rate after 6 hours compared to their replication rates after 24 hours.

a. What does this imply about the CHIKV pathogenesis in human versus murine data sets?

5. Let's apply what we've learned. In a similar investigation with an unknown virus, in vitro data was collected from Species A and Species B. Given the table below, graph each data set and then describe any trends or differences you notice in their rates of change.

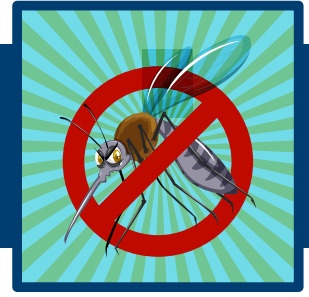
Hours	RNA copies/ mL SPECIES A	RNA copies/ mL SPECIES B
0	10^8	10^8
2	10^3	10^3
6	10^3	10^3
8	10^7	10^5
16	10^8	10^6
24	10^8	10^7



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6. Using the trends identified in question 5, formulate a prediction regarding the differences in the unknown virus's pathogenesis between the two species. Present your answer in the Claim, Evidence, Reasoning (CER) format:
- a. **Claim:** Make a clear predictive statement.
 - b. **Evidence:** Provide support for your claim using specific observations or data calculations.
 - c. **Reasoning:** Offer a logical explanation that connects your evidence to the predictive claim.

Claim:

Evidence:

Reasoning: